THE IRON AGE

New York, December 12, 1918

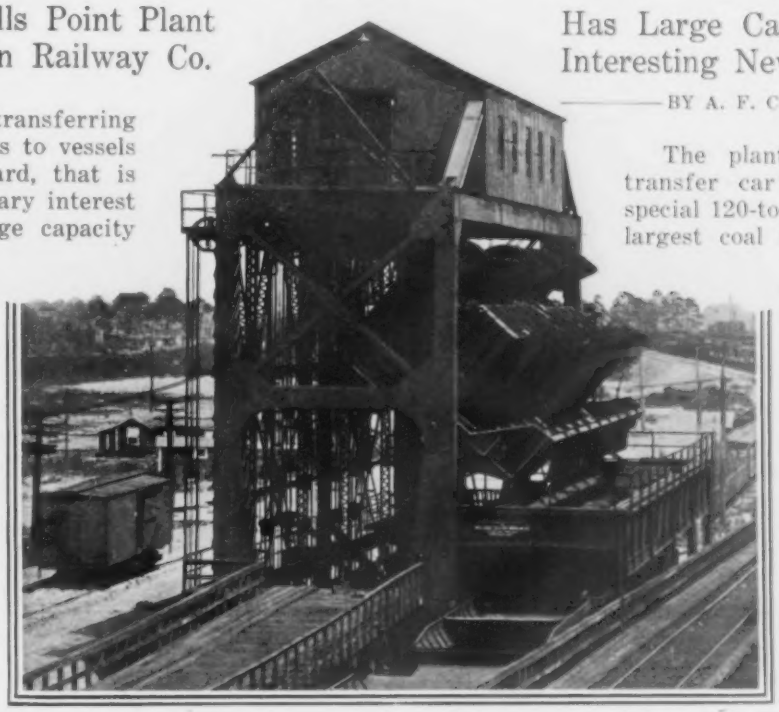
ESTABLISHED 1855 VOL. 102 : No. 24

Double Car Dumper for Handling Coal

New Sewalls Point Plant of Virginian Railway Co. Has Large Capacity and Interesting New Features

BY A. F. CASE*

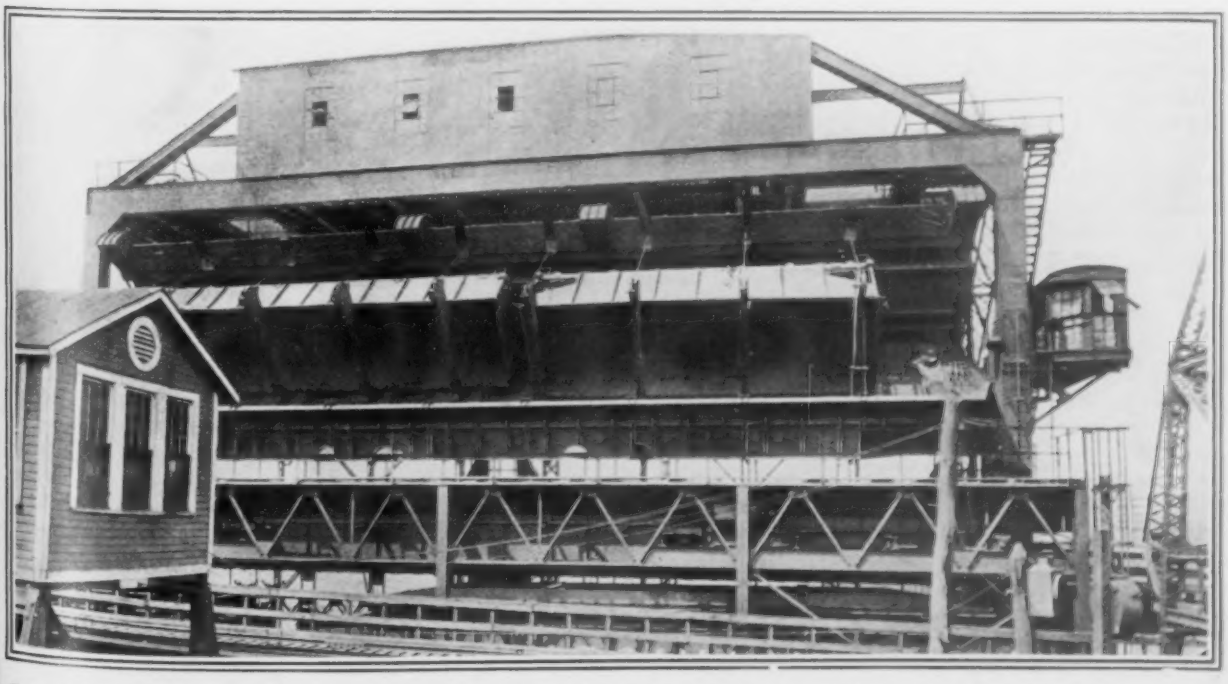
A PLANT for transferring coal from cars to vessels at the seaboard, that is of more than ordinary interest because of its large capacity and various new features, has been placed in operation by the Virginian Railway Co. at Sewalls Point, Va. It is capable of dumping two 60-ton cars at a time, or one 110-ton car, the largest now in use weighing with contents 320,000 lb., recently built by the Virginian Railway Co. This is the first double car dumper and it is capable of dumping two 60-ton cars in two minutes or at the rate of 3600 tons of coal per hour.



Two Cars are Dumped at Once. The rails in the dumper cradle are on a movable platen so that cars of different widths can be handled at the same time. An apron conveyor is at each end of the hopper bottom above the transfer car, into which the cars are dumped, these conveyors transferring a portion of the coal horizontally to the transfer car and eliminating a concentrated chute. All machinery for rotating the cradle is on top of the main structure

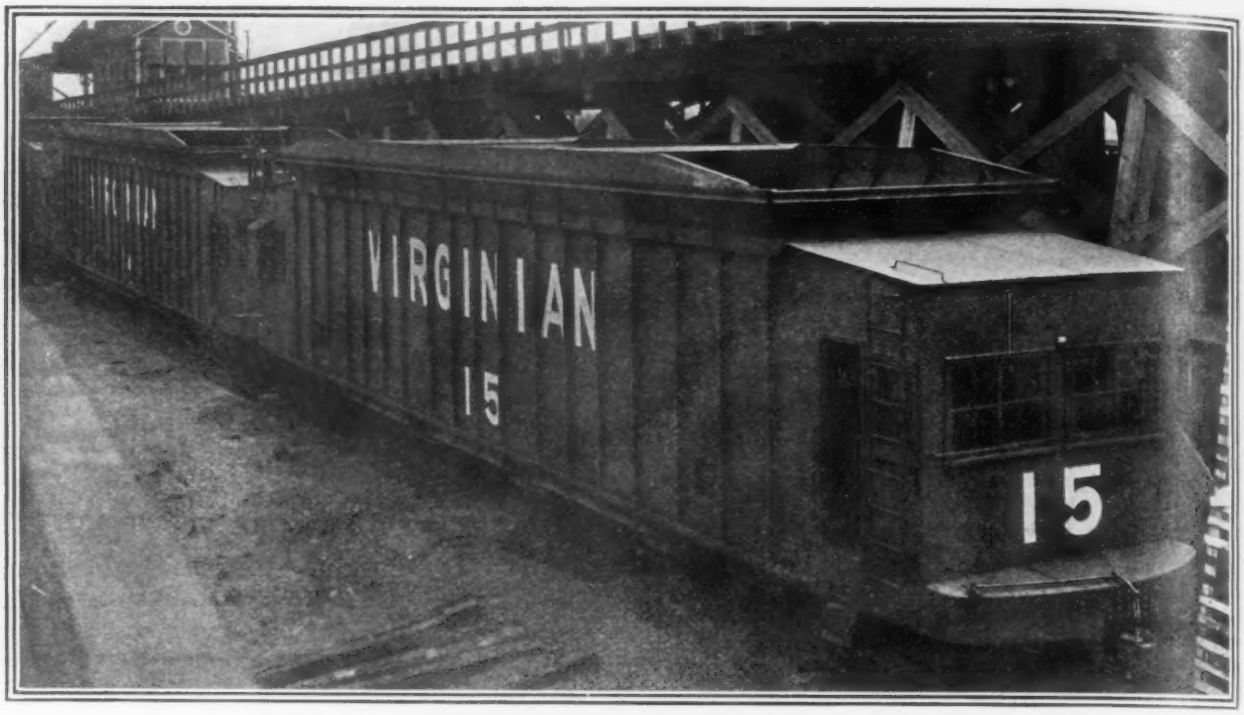
The plant also includes a transfer car elevator and six special 120-ton transfer cars, the largest coal transfer cars ever built, the combined weight of the car and its contents being 400,000 lb. The new plant is an extension to the equipment on this company's pier, which includes a dumper of the single car type. About 4,000,000 tons of coal can now be handled yearly. The extensions were built by the Wellman-Seaver-Morgan Co., Cleveland.

Road cars are brought from the mines and dumped into the 120-ton transfer cars which are then run into the elevator and lifted to



Front of Dumper With the Two Cars Inverted and Held in the Cradle by Eight Automatic Clamps Independently Operated by Counterweights

*Engineer, Wellman-Seaver-Morgan Co., Cleveland, Ohio.



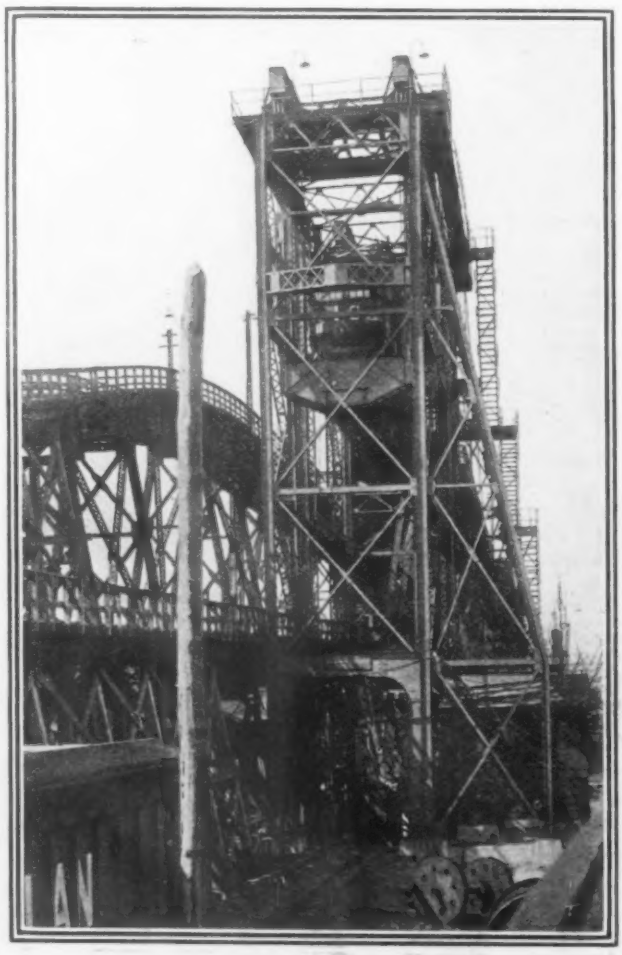
Coal Is Discharged from Standard Railroad Cars by the Dumper into Special 120-ton Self-Propelling Transfer Cars, Each with Three Hopper Compartments

the top of loading pockets where the coal is dumped, to be later discharged through chutes into ships alongside the pier.

The interest in this double car dumper centers chiefly in its ability to overturn two ordinary road cars at the same time. The main frame supports a rotating cradle in which the cars are held while being dumped. Cars are held in place on the cradle by eight automatic clamps, operated independently by counterweights traveling in guides at the rear of the machine. These clamps are so spaced that they engage various lengths of cars and are automatically adjustable to any height or width of standard railroad cars.

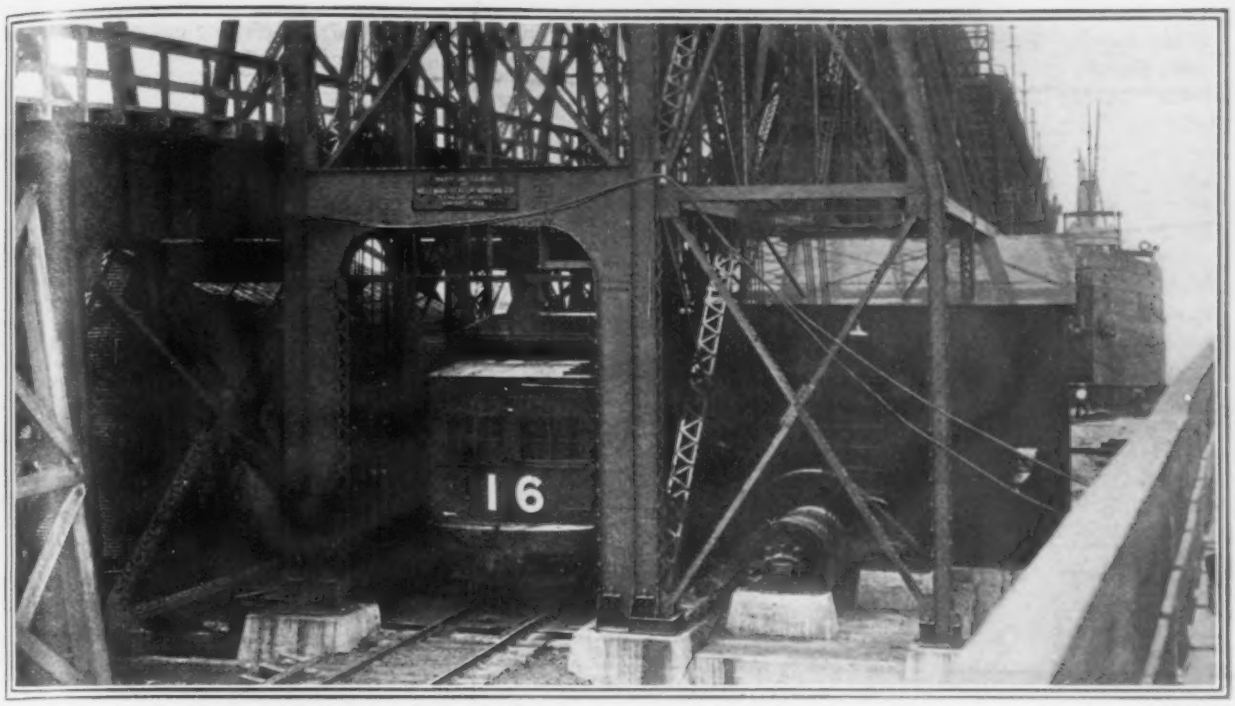
On account of dumping two cars at the same time, the clearance between front posts is necessarily great. These posts are 94 ft., center to center, and the clear dumping space between them is 91 ft. 8 in. Coal dumped from two cars, end to end, is distributed over a considerable length, the maximum being about 88 ft. This is much greater than is obtainable in the hopper of a transfer car, which in the present case is about 51 ft. That all the coal from the road cars shall be properly discharged into the transfer cars without resorting to the use of a concentrating chute, which would at once result in an extreme drop of the coal, two steel apron conveyors, each about 8 ft. wide and 24 ft. long, are supported horizontally in a portal frame in front of the car dumper. A clear space of about 36 ft. is left between the conveyors.

The approach of the car dumper is up a grade of 11 per cent for about 225 ft. Cars are hauled up this incline by a mechanism placed under the approach of the dumper. The mule pit is about 140 ft. from the bottom of incline, resulting in a total length of approach of about 365 ft. The mule car runs on a narrow gage track between the other rails, and lowers into a pit to allow the incoming loaded car to pass over it; for the car must be between the mule and the dumper in order that the mule may push it up the grade.



The Transfer Car Passes Upon the Elevator Over the Track Seen in the Foreground

A double track for the mule car extends from its pit to a point above the gravity rest of the incoming cars. The upper track is traversed by the mule in pushing loaded cars up the approach and the lower track when returning to the mule pit. Selective gates at each end of the double track interlock with the haulage mechanism so that motors and gates reverse at once and the mule returns to the pit by way of the lower track, passing under the loaded

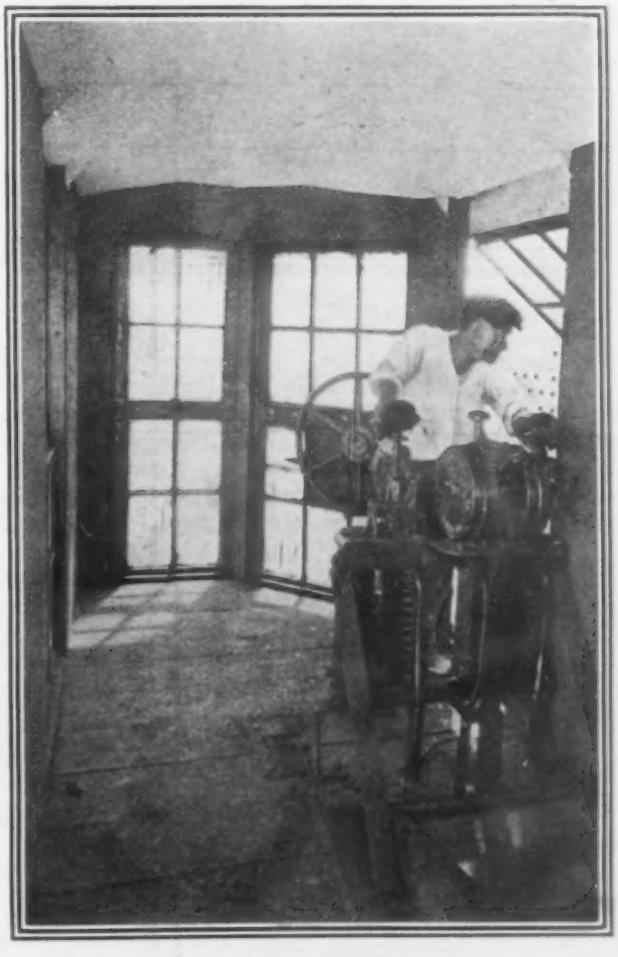


Lower End of Elevator With Transfer Car on Platform

cars at the bottom of the incline. When the pit is reached, the motors reverse and the mule coming out of the pit engages the loaded cars and pushes them up the incline to the dumper.

The mule haulage machinery is under the approach track about 75 ft. from the car dumper. A winding drum is geared to two 275-hp. mill-rated, compound-wound motors, by two reductions of cut spur gearing. Motor gear and pinions have cut herring-bone teeth. The complete mechanism is on a heavy cast-iron bedplate with a concrete foundation. From the drum a steel cable 1⅝ in. in diameter passing around a head sheave connects with the mule car. A tail rope returns the mule to the pit.

A platen insures a bearing of the car against the side of the rotating cradle. The platen is on rollers and moves sidewise with the car until the latter rests against the side of the cradle. As it is quite possible to have two cars of differing widths in the car dumper at the same time, the platen is divided, allowing both cars, separately, to move sidewise. The rails of the platen sections align with the approach and run-off rails when the cradle is at its initial position. When the dumper handles two cars it is not necessary that they shall be uncoupled unless there is great variation in width.



Cab for Operating the Dumper

Master controllers for both cradle and mule haulage are in the operator's cab at the incoming end of the car dumper. After the cars are properly placed on the cradle, the rotating mechanism starts and the cradle with the cars revolves about the pivots until the cars are inverted to an angle of 20 deg. from the vertical, during which period the clamps automatically engage the car. There are eight clamps arranged symmetrically on each side of the center line, each a rigid steel beam hinged to a sliding casting on the dumping side of the cradle. The opposite end of the beam is suspended in the operating cables attached to counterweights. As the cradle starts to rotate, the sliding casting gradually descends till it rests on the top flange of the car, and as the rotation proceeds the clamp beam swings down until its free end engages the opposite top flange. We thus have the car firmly held and supported on three sides: by platen at the bottom, cradle at the side, and clamps at the top, the amount of counterweight being sufficient to prevent the car from falling.

In addition to holding the car, these weights, acting in conjunction with cradle counterweights, assist the cradle to return to its original position after the coal discharges.

Machinery for rotating the cradle consists of four drums, equally spaced lengthwise of the cradle, having three reductions of cut spur gears to two 275-hp. mill-rated, series-wound motors operating on a direct current of 550 volts. These motors operate by a magnetic switch controller having a master controller in the cab. Dynamic braking controls the lowering of the cradle. Each motor has an electrically-operated disk brake instantly setting as soon as the current is cut off. Automatic slow-downs and cut-outs are also included.

Four 1¼-in. steel cables lead from the four drums around deflectors on the back of the cradle, around the under side and are anchored to the cradle frame on the dumping side. As the cradle revolves, it rolls out of these cables into those of the clamps. The center of the receiving hopper for about 36 ft. is open at the bottom and the coal discharges directly through into the transfer car; the coal discharged beyond the limits of the car falls on conveyors and is carried to the car. These conveyors interlock with the cradle so that when rotation starts the conveyor motor operates and the conveyors are in full action when the first coal falls. These conveyors are operated by an 80-hp. mill-rated, series-wound motor, connected by direct worm gear reductions, moving at about 100 ft. per min. The car dumper completes the cycle in 2 min.

Coal is delivered to the plant in various sizes and types of road cars not possessing the quality of self-cleaning so essential to economical operation. For this reason the car dumper is used to remove the coal from the road cars and load it into special self-cleaning and self-propelling transfer cars.

Driving motors are mill type, each of 60 hp. with series-parallel control, geared to 12 miles per hr. A complete Westinghouse air brake system operates six sets of shoes on each truck.

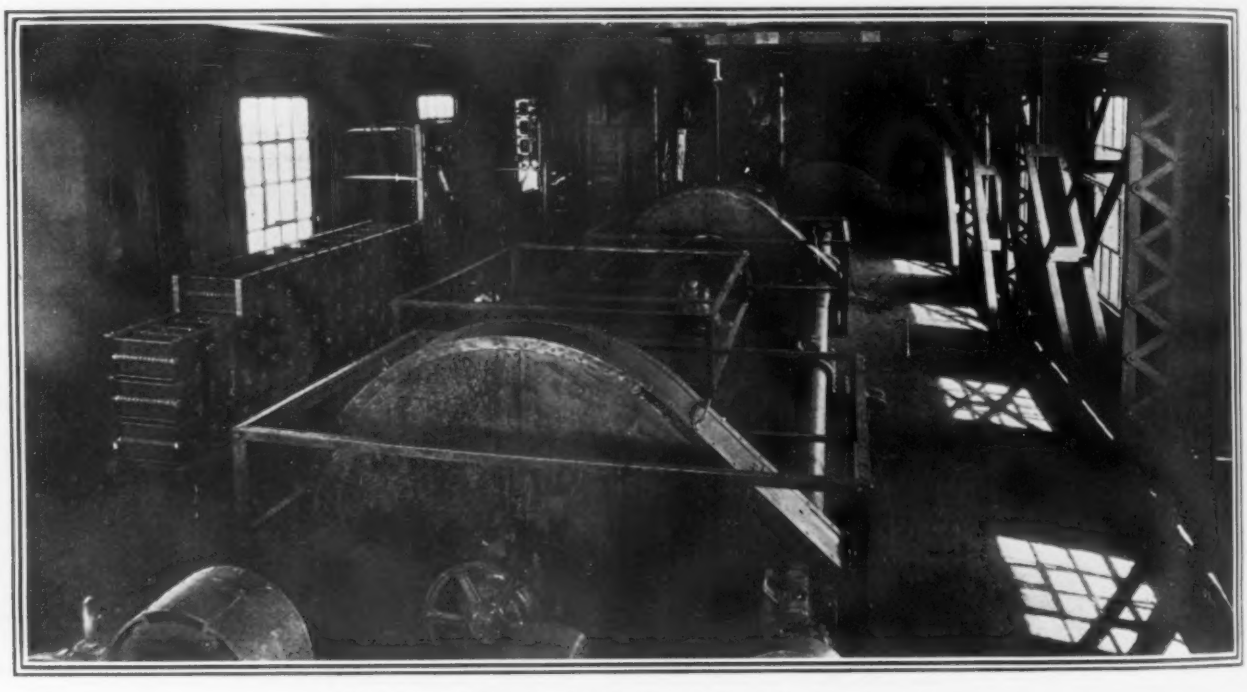
The car has a length of about 70 ft., height 16 ft. and width 12 ft. The body of the car is divided into three compartments, each of 40-ton capacity. Each compartment has a double system of discharge gates at bottom. A small compressor supplies air for the compartments as well as for the brakes.

The elevator has a steel frame carrying sheaves for hoisting and forming a vertical guide for the lifting platform. The lifting platform carries rails for the transfer car and also a section of over-head trolley wires energized at the upper and lower limits of travel, but carrying no power elsewhere.

Machinery for the platform is somewhat similar to that on the car dumper. Two large drums are connected to an intermediate shaft by cut spur gears. Each shaft motor has a rating of 450 hp. They are open type, compound wound for 550 volt direct current.

A powerful solenoid-operated brake is attached to the armature shaft of each motor and sets when current is cut off. This provides safety as well as positive control.

Three separate rope systems operate lifting platform; drums direct to platform, drums to counterweight and counterweight to platform. There are 12 ropes, 1⅛ in. diameter, to each drum and twelve 1⅜-in. ropes between platform and counterweights.



Machinery House for the Equipment Operating the Dumper

Connecting the frame of the elevator to the pier is a hinged run-off girder, insuring perfect alignment of rails on platform and pier. This girder hinges to the pier and permits of a vertical movement of the free end of about 2 ft. The free end of the girder normally rests on brackets on the elevator frame, and is lifted by projecting lugs on the platform as it comes to its upper limit. This travel is controlled by an electric switch. Power is supplied to the trolley wires in this position, and the transfer car passes out of the elevator, over the hinged girder, and then discharges. The empty car returns down the inclined track in the center of the pier structure to the loading track in front of the car dumper.

The entire capital stock, property and assets of the Electric Steel Co. of Indiana, Indianapolis, have been purchased by J. Rogers Holcomb and Roger B. Farquhar, Jr., formerly connected with the Midvale Steel Co., who will continue the business of the company under the same name. Mr. Holcomb is president of the Electric Steel Co. of Indiana and Mr. Farquhar, vice-president.

CARBON IN CAST IRON*

A Rapid Method for the Determination of Both Total and Graphitic

BY FRANK H. KINGDON

The following rapid method has been found suitable for routine work in determining total and graphitic carbon in cast iron. A brief description of the combustion furnace and train will give an idea of the apparatus used.

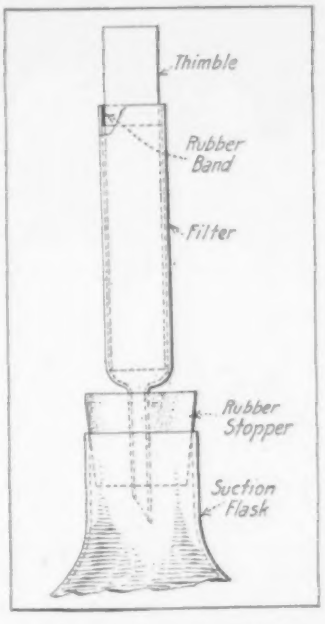
Oxygen under pressure is conducted through a Y-glass tube to a Fleming mercury gage at one end, and from the other end to a potassium hydroxide (KOH, 1:1) jar. It next goes to a jar, the lower half of which contains $CaCl_2$, the upper half soda lime, then to a mercury valve tube, then to a Hoskins combustion furnace with 24-in. quartz tube glazed.

The outlet part of the train consists of a zinc jar and phosphoric anhydride jar. The gas is collected in a Vanier absorbent and weighing jar filled with liquid potassium hydroxide (KOH, 1:1) and stick potassium hydroxide. At the outlet end of the furnace a platinum couple is inserted with a small pressure tight quartz tube through a 2-hole stopper so that the couple end is about over the boat position in the furnace. The apparatus is tested for leakage by using aspirator bottles.

Samples of cast iron are ground to pass a 60-mesh sieve. For total carbon twice the factor weight (0.5454 gram) is placed in an alundum boat filled with 90-mesh alundum. Better results are obtained with the use of red lead. From one to two grams of red lead are placed in the alundum boat and the iron sample distributed on the red lead. It is advisable to run a blank determination on the red lead.

The boat is placed in the furnace which is at 1750 to 1800 deg. Fahr. and oxygen passed at about 200 c.c. per min. The combustion proper is complete in from six to eight minutes and from 12 to 15 min. more is ample for forcing all the gas through the train into the weighing apparatus.

For the graphitic carbon determination a 1-gram sample (60 mesh) is transferred to a 150 c.c. beaker, 40 c.c. of nitric acid (1.13) is added and gentle heat applied until the solution is complete. It is then boiled for five minutes and the graphite allowed to settle. Filter into the thimble as described below using hot water. Wash five times with hot dilute hydrochloric acid, then 10 times with hot water. Place the thimble in a drying oven at 110 deg. C. for 30 minutes, then place in the combustion furnace, open end in first, and proceed for regular carbon determination.



Construction of the Thimble Filter and Suction Flask

The thimble is a Norton alundum extraction thimble, measuring 15 m.m. outside diameter by 90 m.m. high. This is placed into a carbon filter tube 16 m.m. inside diameter and an air-tight joint made by using a rubber band, as shown in the illustration. A regular suction flask and water filter pump is used.

The 25 per cent steel sample was a cast iron in which 25 per cent of steel was used in the mixture. This iron analyzed as follows: Manganese, 0.60 per cent; silicon, 1.80 per cent; sulphur, 0.107 per cent; phosphorus, 0.40 per cent.

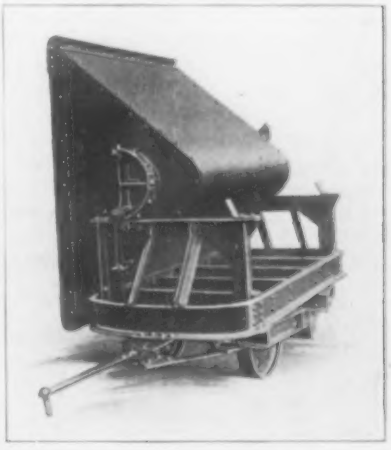
The following table gives some of the results obtained:

No.	Sample	Total Carbon, Red Lead Used, Per Cent	Graphitic Carbon, Per Cent
1.	Gov. iron *C*	2.80	2.30
2.	Gov. iron *D*	2.49	1.90
3.	25 per cent steel	3.00	2.20
4.	Gov. iron *C*	2.81	2.29
5.	Gov. iron *D*	2.48	1.89
6.	25 per cent steel	3.02	2.19
7.	Gov. iron *C*	2.80	2.29

*From a paper presented at the convention of the American Foundrymen's Association at Milwaukee, Wis., Oct. 7 to 11. The author is with the Sullivan Machinery Co., Claremont, N. H.

A Trackless Trailer with Dump Car Body

The increasing use of industrial tractors has created an unusual demand for trailers. To meet this demand for a car that would not only admit of easy trailing, but would also facilitate loading and unloading of loose materials, a four-wheel steer trailer has been developed by the Easton Car & Construction Co., Easton, Pa. The carriage is designed so that it will run over cement, wood, composition or any kind of flooring. When supplied with extra large wheels, it is stated that it will even run quite smoothly over rough ground. All wheels are equipped with roller bearings and where requirements demand may be furnished with rubber or composition tires.



Toothed Movable Trunnions and Flaring Sides Are Designed to Throw Loads Downward at 45 Deg., Free of the Wheels of This Dumping Industrial Trailer

Close tracking of trains of these cars is accomplished with comparative ease because both front and rear trucks of each trailer swivel. Trains of six cars will track within 3 in. and will take a curve of 8 ft. radius or smaller.

The body of the trailer is equipped with a special latch for locking the body in a half-dumped position, thus lowering the loading height for hand loading. Automatic safety latches are provided. Flaring sides and semi-circular toothed movable trunnions enable the operator to throw the material clear of the wheels and it is stated, to give an angle of dump of 45 deg. The construction of the body is of heavy material, intended to withstand hard usage. Cast-steel rockers and extra heavy underframes are provided.

Abundance of Ferroalloys in Great Britain

The condition of the British market for ferroalloys has been completely reversed during recent months, almost a slump having succeeded the famine-like shortage of last year, says the London *Ironmonger*. Such materials as tungsten, ferrochrome, ferrovanadium and ferrosilicon are almost a drug on the market, and considerable stocks are lying at importers' and merchants' warehouses. The consumption of ferrosilicon, however, is being well maintained, and the present surplus is merely the result of exceptionally heavy consignments from the United States some time back. In this case matters may be expected soon to right themselves.

A handy chart and a manual for signaling, adapted for use in the merchant marine or naval services, have been issued by the Army & Navy Signal Publishers, 8 Beacon Street, Boston, Mass.

Mechanical Engineers and the Man Problem

Stirring Discussions on the Human Equation in Industry and the Engineer's Growing Influence—Steps Toward Democracy

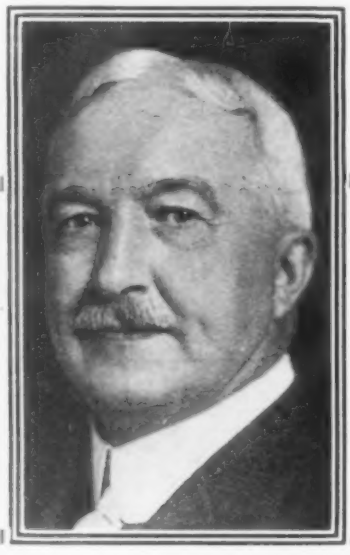
FROM Dec. 3 to Dec. 6 the members of the American Society of Mechanical Engineers at the annual meeting in New York took part in what it was agreed was the most important of all its conventions. Both in point of close attention and of active participation in the discussions by the assembled membership, as well as of timeliness and value of the papers presented, the occasion was full of interest from start to finish.

Simultaneous sessions conducted in several of the halls were an embarrassment where a member found topics of special importance to him considered in two or three places at once. All the papers were freely discussed because of the happy selection of subjects. In spite of the repeated emphasis laid upon the necessity of expeditious procedure, there was an overlapping of time and every chairman's intentions to close on time were wrecked beyond repair.

The feature of the meeting was the spirited discussion of papers dealing with management and production problems, in other words, the human problem in industry. Of great interest were the speeches of Tuesday evening, Dec. 3, in connection with the conferring of honorary membership on Charles M. Schwab and Orville Wright.



ORVILLE WRIGHT
Honorary Member



MORTIMER E. COOLEY
President, 1919



CHARLES M. SCHWAB
Honorary Member

Presidential Address

At the opening session Tuesday evening, President Charles T. Main in his annual address on "Broader Opportunities for the Engineer" explained why this country went to war, summing up in the statement that it was that our nation and others might live with the maximum of safety and with the greatest amount of liberty. He predicted that there would be a remodeling of the political, social and business conditions of the world so that our country will be one of greater unity of purpose and desire, with a more spiritual and less materialistic view of life and with greater unselfishness in the service of our country and of mankind.

A NOTABLE RECORD OF WAR SERVICE

In a comprehensive survey of the work of the society and of its members during the year, Mr. Main showed the many and far-reaching agencies the society has promoted as well as originated for the winning of the war. More than 6000 names of engineers were supplied to the Government for filling a wide variety of positions. This is indeed the most important single bureau in the United States for the furnishing of technical men.

The work of providing coöperation between engineering societies in matters of common interest to the public; the conservation of fuel; the standardization of gages; the readjustment of the industries for war work; society representation on the joint conference in London on Air Craft Standardization—the same delegates, Messrs. Hartness and Durand, were also empowered to take up with the British Engineering Standards Committee the standardization of screw threads—the helpful welcome of foreign missions, as of Belgium, coming to the United States to study our methods of management; protests against the "anti-efficiency" riders in proposed legislation which would exclude from all Government work methods of studying and planning and of compensation for increased efficiency; these and other activities were summarized as showing the enterprise of the society.

Mention was also made of the work of the individual members, 1400 stars being on the society's service flag, while two members of the council of the society are in uniform in France, and a third, as a distinct war service, is in charge of one of the largest shipyards.

THE ENGINEER AND INDUSTRIAL RELATIONS

Mr. Main put plainly before the members the necessity for thoroughgoing efforts to increase production and urged that engineers be qualified to discuss with impartiality the problems involved so as to act as arbiters in the settlement of questions involving industrial relationships, enabling all citizens to live and work together under conditions producing the maximum amount of happiness. In closing he said:

> As a people we should readjust our methods of life, getting down more nearly to the fundamentals, eliminating many extravagances and wastes in our private method of living, in our local, State and national governments, in education, in the industries and in all of our activities, so that we may not rob future generations of the heritage which is rightfully theirs, and that by elimination of many cumbersome things we may get a better perspective of what is necessary and right and live with a better conception of the real things of value on this earth.

The New President

President-elect Cooley was introduced and made brief but hearty acknowledgment.

Mortimer Elwyn Cooley was born at Canandaigua, N. Y., on March 28, 1855. He graduated at the United States Naval Academy in 1878 and soon after his graduation he was as-

signed for duty on a cruise in the Mediterranean Sea. His promotion in the Navy was rapid, and at the time of the Spanish-American War he was serving as chief engineer on the Yosemite.

During the years following the close of the war he undertook considerable appraising work in the power plants of the Detroit Street Railways and in the railroads, telegraphs and telephones of the State of Michigan. He assisted in the appraisal of the mechanical equipment of the Newfoundland railroads and subsequently was placed in charge of the appraisal of hydro and steam electric properties and railroads for the Michigan Railroad Commission.

He served as vice-president of the American Society of Mechanical Engineers in 1901-1903 and in 1916-1917 was chairman of the executive committee, Detroit section. From 1907 to 1912 he acted as chairman of the Block Signal and Train Control Board, Interstate Commerce Commission.

His career as a professor began at the University of Michigan in 1881, when he took charge of the mechanical engineering department. In 1904 he became dean of the College of Engineering and in 1913 dean of the College of Architecture of the university.

Charles M. Schwab, Honorary Member

In conferring honorary membership in the society on Charles M. Schwab, and in introducing him, President Main spoke in part as follows:

Charles M. Schwab was born on Feb. 18, 1862, at Williamsburg, Pa. His father was a wage worker in wool and the Schwabs were very poor. In 1867 the family moved to Loretto in the Alleghenies and after a short stay decided to remove to Braddock. At 12 the boy drove the Cresson-Loretto stage; then worked as a grocery clerk, was afterward at 18 hired as a chain carrier by a civil engineer of the Edgar Thomson works and in six months became chief of the gang; was promoted to managership of the Homestead plant, becoming in 1897 president of the Carnegie Steel Co. and later on head of the United States Steel Corporation.

Andrew Carnegie has said Charles M. Schwab is the most practical steel man in the world. The men who worked with him and under him say Schwab would have succeeded in any other line of business, because he started in the right way.

He holds membership in various societies and industrial organizations in America and Europe; is a member of the American Iron and Steel Institute, the American Institute of Mining Engineers and the Iron and Steel Institute of Great Britain. His personal characteristics are strikingly forceful. He shows keen and certain judgment, and a manner openly frank and unassuming, but the predominant trait in his nature is the gentle, affable and sympathetic temperament which wins admiration and friendship.

His appointment as Director General of the Emergency Fleet Corporation put him at the head of the biggest job of shipbuilding ever undertaken. Until the Hog Island and Port Newark shipyards, now completed, were built, Mr. Schwab's Bethlehem Steel Co., through its subsidiaries, controlled about 40 per cent of the shipbuilding industry in the United States. In 1904 the Bethlehem plant employed 9461 workmen; to-day it employs 60,000 and has taken more than $300,000,000 in war orders for guns and ammunition.

Past-President John A. Brashear supplemented the introductory remarks of the chairman by recounting many personal incidents in his long acquaintance with Mr. Schwab, of his visits as a lecturer on science to the steel plant at Mr. Schwab's request and of the coöperation and encouragement he had obtained from Mr. Schwab in this work and that of building his observatory.

Mr. Schwab's Response

Intimating that he had already expressed to President Wilson a desire to return to the work of reconstruction in the industries controlled by him, Mr. Schwab said that though a peace treaty was more than an armistice, yet the signing of the latter had brought immediately before the nation the reconstruction and readjustment of industry. Machines and men have been applied to the uses of war, and must now be turned back to the uses of peace. He had shouldered a bigger responsibility as Director General of the Emergency Fleet Corporation than he expected. The prospect involved so prodigious a program that after a few days' study of it he would gladly have relinquished the responsibility. However, he shared it and he cordially acknowledged the great help that all his associates of every grade had given him. From end to end of the land his ears had been cheered by the words, "We are with you, Charlie."

They were with him and he had learned that the tremendous program would be carried out by neither plans nor by machines, but by human engineering. More than 90 per cent of his time, therefore, had been spent in the shipyards. Before the war the greatest annual production in our shipbuilding in the United States was about 400,000 deadweight tons. General Goethals assured him that next year we should need 8,000,000 tons in service, not merely launched. We were constantly approaching that requirement of, say, 700,000 tons per month. Our construction in November was about 500,000 tons, and the total for the current year somewhere between 3,500,000 and 4,000,000 tons.

Orville Wright

An account of the experiments of the Wright brothers was then presented by President Main as follows, in conferring honorary membership on Orville Wright:

Orville Wright and his elder brother, Wilbur, were the first men to fly. Their fame is world-wide. Orville was born in 1873 in Ohio. The Wright brothers are two of the most taciturn of celebrities, men of ideas but not of words. Sons of Bishop Milton Wright of the United Brethren Church, they had the usual bringing up of boys in a fairly well-to-do family. When success came to them they freely admitted having received much encouragement and financial help from their sister, Miss Katherine Wright, a school teacher.

Bishop Wright hoped his sons would follow in his steps and become ministers, but one evening in 1878, when Wilbur was 11 and Orville 7, their father brought home a French toy for them, a helicopter, or flying spinner. This was a crucial date for the world. It turned the Wright boys' thoughts definitely toward flying machines.

The boys played about Dayton, printed a boys' paper, and as youths went into the bicycle business and began experimenting with flying machines. They went to the sand dunes of Kittyhawk, N. C., in October, 1900, and there in a rough camp on Kill Devil Hill, cooking their own meals, working with their hands and risking their necks again and again in experimental flights with gliders, they fought out the problem to success.

They had a glider in 1900 that would stay up, but would not support a man in the air. The first heavier-than-air machine was built by them in 1903, Dec. 17, that would ascend under its own power and carry a man. It stayed up one minute with Orville, and rose 900 ft. In 1904 the Wright machine flew a mile. Orville Wright flew 24 miles in 1905 from Ft. Myer, Va., to Shutter's Hall and back at the rate of 42 miles an hour, carrying Lieut. Benj. D. Foulois, U. S. A., as a passenger—a test that won the indorsement of our Government. The Wright stabilizer was designed in 1908.

The brothers were decorated by the French Academy in 1909 with the cross of the Legion of Honor. After 1910 they flew but little. They said they had done their part and thereafter would devote themselves to making aeroplanes.

Orville had the sad distinction of being in the first fatal aeroplane accident, in 1908, when Lieut. T. E. Selfridge, U. S. A., flying with him, was killed at Ft. Myer. Orville then suffered a broken leg.

Mr. Wright listened to the remarks with manifest appreciation, but limited his acknowledgment to rising and recognizing the honor by a respectful bow. In this he bore out the reputation recorded of him in the chairman's biographical notes. A reception ended the proceedings of the evening.

An Organization Meeting

At the business session on Wednesday there were greetings from the executive officers of sister engineering societies, President Talbot of the American Society of Civil Engineers, and President Adams of the American Institute of Electrical Engineers, speaking for those organizations. The former referred to the total of 35,000 members in the four national engineering societies and to the assertion that there were in the United States some three times that number, representing a tremendous force in the several communities. Mr. Adams alluded to the advisability of meeting labor in a progressive way and facing labor questions fairly and squarely, realizing that the real interests of labor cannot be separated from those of the engineer, and

that the situation was not to be met by repression or "standing pat." Both speakers had obviously examined the program and had suggested to them the growing desire for more action in public affairs by engineers.

L. D. Burlingame asked as to the membership of the American Society of Mechanical Engineers, and Secretary Rice replied that the total is now 9770.

More Democracy

On the report of the Committee on Constitution and By-Laws it was unanimously decided that the appointment of nominating committees be no longer wholly in the hands of the president, but directly controlled by the membership, the sections being accorded representatives. This matter was ordered sent out to the membership by letter ballot. Pronounced one of the most important and far-reaching decisions the society has made, this action, which is subject only to the letter ballot, is in the direction of a further and an appropriate democratization, as it was termed.

The Committee on Aims and Organization presented what Chairman Marburg called a statement of progress. Some comment was made on its general tenor, a desire being expressed for something akin to a "14-point" declaration. At any rate, there was a sentiment that local societies should be encouraged and that each be a rallying point for the neighboring and the neighborly engineers in every section of the country.

At noon, Dean Kerchway, formerly of the Columbia Law School, followed the luncheon with an inspirational address, "A Message from the Legal Profession."

Machine-Shop Session

The afternoon was devoted to a machine-shop section and Brigadier-General L. R. Kenyon of the British War Mission, and H. J. Bingham Powell, British Inspection Department, explained the work of the British Engineering Standards Association.

Frank O. Wells, H. L. Van Keuren and L. D. Burlingame submitted papers respectively on thread gage making, their measurement, and on standards for large taper shanks and sockets. The point was made that too refined specifications are worse than useless, and that the requirements of the job should not be exceeded in what is wanted of a thread gage, owing to the very greatly increased difficulty of manufacture when the working limits are closely approached.

A joint session was under way the same afternoon with the American Society of Refrigerating Engineers in the discussion of refrigerating plant efficiency.

An illustrated lecture was given on Wednesday evening on the "Achievements of Naval Engineering in the War" by Lieut.-Commander William L. Cathcart.

American Engineers Abroad

Thursday morning, Dr. L. F. Rowe, Acting Secretary of the United States Treasury, gave a splendidly stirring account of the "Engineer in Foreign Service."

The speaker had seen American engineers at work in almost every part of the American continent and had been impressed not only by their technical preparations and ability, but by the broad statesmanship that they have shown in the handling of large masses of foreigners and in their dealings with foreign governments. But the number available for the work has been entirely too small and in order that the United States may constantly have an engineering reserve to meet the needs of this continent, it will be necessary to broaden the training of the engineer so that he may set forth with something more than the technical equipment of his profession.

The opportunities presented to the engineer in the countries of Latin America, both pecuniary and from the standpoint of recognition, are so great and so varied that all that it will be necessary to do will be so to adjust the preliminary training and equipment of students of engineering that they will be prepared to avail themselves of these opportunities. Beyond question of technical equipment we must instil into the mind of every engineer the larger international service which he is rendering when he undertakes a great work in a foreign country. There is a lack of adaptability in the average American in adjusting himself to foreign conditions. It is difficult to secure men who are willing not only to begin but to complete large public works in foreign countries. This is true in every other field of endeavor. American houses in South America employ Swiss, Dutch and even Germans because of the unwillingness of American employees to settle down in those countries for any long period.

It is important to bear in mind that when a member of the profession undertakes the supervision of a public work in a foreign country, he becomes in a very real sense a representative of the people of the United States. He must be able to understand the viewpoint of nations different from our own. The engineer in charge of great public works has often under his immediate direction great masses of native labor, and it is most important that he should show real interest in their welfare, contributing within the measure of his power toward the increase of their efficiency and the raising of their standard of life.

Management and Production Problems

Following Dr. Rowe's address papers were presented on "Industrial Organization as it Affects Executive and Workers," C. E. Knoeppel; "Standardization and Administration of Wages," E. D. Howard and Henry P. Kendall; "Non-Financial Incentives," R. B. Wolf; "Organization of the United States Shipping Board," Charles Piez; "Employment of Labor," Dudley R. Kennedy; "Labor Dilution as a National Necessity," Frederick A. Waldron; "Intensive Training," C. R. Dooley.

These papers had abundant and frank examination. They are not easily condensed for use in this general review of the meeting. Later they will appear in these columns as fully as space will permit.

John F. Grace in speaking of the great value of simple pictures and graphic methods to bring the points before the men in plants asserted that they were better than any textbooks. Tweed had flourished, notwithstanding the printed attacks of the newspapers, but the cartoons of Nast brought about his downfall. This was in comment upon Mr. Knoeppel's paper. But a later speaker drove home the same argument in showing what could be accomplished if the workman clearly understood. Mr. Wolf had used diagrams in the cooking control of a pulp digester in the paper industry. Men on seeing the vagrant curves of their performance and on having the record tables of their operations put in their hands, with an understanding of the relationship between what they did or did not do as affecting paper quality and output, by comparison with the work of their associates, had energetically labored to improve. The results were remarkable. Even men who had at first doubted their ability ever to "get the hang" of the method took hold with vim and succeeded. One such man had taken the charts and tables home where he could have the aid of his wife in wrestling with the figures, and at last mustered up courage to tackle the task. He made more than good, becoming in time the best man on the job.

A Fair Deal

C. W. Johnson recognized that all should be concerned in the man question, and that there was need of an inspiring rule of effort, seeing that industrial relations are so extremely complicated. In these there should be a simple keynote. His was to treat every man fairly. He did not mean to do this in a passive sort of way, but to make it outstanding. First of all, know the man and the job.

John C. Parker considered the fundamental principle to be self-control. The man who cannot control himself cannot control others. He gave a number of illustrations.

C. M. Bigelow had found that some welfare plans had been merely substitutes for the remuneration of the workman—a course that in due season defeated the object.

Secretary Rice read a congratulatory telegram from the president and council of the Engineering Society of Canada, which expressed the hope "that with the conclusion of the world war we may more closely coöperate," taking occasion to say that the American Society of Mechanical Engineers is already working jointly with British engineering bodies. Alluding to the address by Dr. Rowe, he told of the custom at Annapolis by which some renowned naval officer's history was briefly submitted while the listening class stood at attention. He suggested to professors of

engineering that they might likewise impress upon students their relations and possibilities of service to the community.

Appreciating the Cost of Work

R. B. Wolf in his paper on "Non-Financial Incentives" made the point that the structure of society will disintegrate unless men deal with one another constructively and not destructively. He believed the true end of management was to make men conscious of their environment and know what they are doing. He had seen men take far greater interest in their work when they knew what it cost. His company has given men a statement of the cost of the various items entering into a repair job down to the expense of a washer. That method had cut the cost of repairs. One man, when he saw that a pair of $9 clamps had been charged up against the job, said at once, "Gee, I never knew they cost that much." Superintendents and managers need a cost sheet. Lack of it means indifference. Mr. Wolf made it very clear that he was in favor of the laborer receiving his hire, and a good one at that, but his paper dealt with these other incentives that in the course of an illuminating experience he had found exceedingly helpful.

Prof. Diemer believed that it was advisable to educate the engineer, the employer and the public to get the best solution to the labor problem. Not until a man gets into a position of responsibility does he take an interest in human nature. At Pennsylvania State College they are giving a course in management to future managers and industrial executives.

The Rewards

John C. Parker described the reward as not necessarily having only the dollar sign. Certainly the men who served as privates and officers at $30 a month or more had something else in mind than the money when risking their lives. Both for the man who leads and the man who is led there is the reward ahead. Strenuous competition had been mentioned; to his view that was the best kind of competition. Really the incentive is to do something that will be credited to us. That is the thing that applies to everyone. There has been a lack of faith in the possible solution of this problem. "If everyone should be employed all the time the world would soon be over-populated." Any man who thinks that way cannot do justice to this question. What we want is an over-population of managers. It is better to push a man up to make room for yourself than to push him down.

Output Limitations to Go.

F. B. Gilbreth felt assured that labor is coming to a far different attitude. What is the man to say and think and do when he comes back home from the front and finds a woman holding down his job? What if she does that work as well or better than he did? What is coming is a removal of all restrictions upon output. Great Britain already knows and is acting upon what she knows—that the only solution for her in future trade is in the removal of all restrictions on production. He felt that under old conditions it was good business from the workman's point of view to hedge production around with limits. There would be big differences especially in the practice of shipbuilding. There are many shop committees of workingmen already busy in plants actually coöperating to improve the rate of production and the working opportunities.

Oberlin Smith observed that the enmity between capital and labor is dying away. There is need to educate the leaders of labor, and perhaps that could be done. Perhaps it is possible even to educate the Government. The most foolish of laws was the one that cut out the time study and the stop watch. We must go forward. Mother's pies were good, but there was a baker who listed two kinds: One "the sort that mother used to make" and the others were labeled "the kind that mother should have made."

While the above discussion on the engineering of man power was in progress, another session was held on "Textiles," and at a general session a paper on "The Weights and Measures of Latin America" was presented by F. A. Halsey, one on "Efficiency and Democracy" by H. L. Gantt, and another on "The City Manager." The first of these papers was discussed by Justin W. McEachren, Prof. A. E. Kennedy and Dr. George F. Kunz. In this discussion a compromise long ago advocated by the writer of this report—the adoption of a 40-in. meter—was again proposed and found favor.

On Thursday evening an illustrated lecture on "Railway Artillery" was given by Col. James B. Dillard, United States Army.

A Power Session

Friday morning was the final assembling for two simultaneous sessions, the first dealing with power plants and having papers on "Conservation of Heat Losses from Pipes and Boilers," by Glen D. Bagley; "Chemical and Physical Control of Boiler Operation and the Application of a Simple Formula for Estimating the Heat Loss Items, etc," by E. A. Uehling; "Cooling Losses in Combustion Engines as Affecting Design," by C. A. Norman; "Certain Problems in regard to Marine Diesel Oil Engines," by J. W. Anderson. The other session was general in character and embraced "Valves and Fittings for High Hydraulic Pressures," by W. W. Gaylord; "Relative Corrosion of Alloys," by R. B. Fehr; "Relative Corrosion of Cast Iron, Wrought Iron and Steel Pipe in House Drainage Systems," by William P. Gerhard; "Determination of Stresses in Wire Rope as Applied to Modern Engineering Problems," by J. F. Howe; "Mechanical Features of the Vertical Lift Bridge," by H. P. Van Cleve.

Baird Machinery Co.'s Expansion

The W. J. Baird Machinery Co. now occupies the whole six-story building at Brush Street and Jefferson Avenue, Detroit, having succeeded in obtaining possession of the upper floors, which were under lease to other parties when the Baird company moved into the building a year ago. Possession of the entire premises gives more than 75,000 sq. ft. of floor space, making the house one of the largest of the kind in the United States. The company deals in wood and metal working machinery, machine tools, small tools and transmission equipment, and manufactures the widely known Baird pottery machinery.

The basement is used for the storage of belting, pulleys, hangers and related supplies. On the first floor are the iron-working machine tools, and small tools. The second floor is given over to the general offices, the printing department, employees' dining room and a stock of iron-working machinery. On the third floor are the repair department and the manufacturing end of the business. The fourth floor is devoted to wood-working machinery, and the fifth and sixth floors to surplus stocks of machine tools.

Facilities for receiving and shipping are of the most modern character, while the arrangement of the stock affords the most desirable opportunity for display. The augmented facilities have been made necessary by the growth of the company's business in the past year.

Clark & Gibby, Inc., office furniture, 343 Broadway, New York, recently celebrated the tenth anniversary of its establishment in business. George M. Clark, president of the company, has for some time been in Italy, serving as a Y. M. C. A. secretary with Italian troops. For some weeks he was the only American in his locality but he found the Italians highly appreciative of the work done by the Y. M. C. A. in sustaining the morale of the Italian army.

The Canton Steel Foundry Co., Canton, Ohio, is increasing its capital and is offering $500,000 in preferred stock, the proceeds of which will be used in paying off indebtedness which has accumulated during the company's rapid growth of the past two years. It is building an additional furnace of 40 tons' capacity and is arranging to put in a power plant.

War Work in Steel and Machinery

Review of the Creditable Part Taken by the Pig Iron, Steel and Machine Tool Divisions

WASHINGTON, Dec. 10.—The annual report of the Council of National Defense contains an interesting detail of the work done by the Steel Division, as reported by J. Leonard Replogle, Director of Steel Supply.

"All requisitions for steel for war purposes," says the report, "have been distributed to the various manufacturers through this office in accordance with their ability to produce, thereby effecting an equitable distribution and placing the orders with the mills best suited to deliver within the time required. All steel-producing companies are required to furnish a weekly report of orders received, shipments and unfilled tonnage to Army, Navy, Emergency Fleet, other United States Government agencies, domestic non-Government agencies and to each of the Allies. By these reports it is possible to see the exact condition at each mill on each product for the various Governmental departments and the Allies, and in the distribution of new orders the condition of the mills as shown by these reports is the basis for allocations.

Readjustments of Steel Output

"When the office of the Director of Steel Supply was created only a very small amount of the steel being produced was used for war purposes, and it was confronted with a great task of converting the manufacturers over to producing steel for war necessities, including immense tonnages of shell steel, ship plates, structural steel, rails, etc. As it soon became apparent that certain products of iron and steel were produced in excess of that required for war purposes, while of others there was a great shortage, new facilities had to be created for shell steel, plates, and the raw steel supply needed to operate the new facilities created for these products taken away from finished steel commodities not required for war purposes. All of this was naturally very gradual. The office was confronted by many obstacles, principally including the matters of transportation and supply of coal and coke during last fall and winter, at which time the production of steel was not averaging more than 50 to 60 per cent of capacity.

"In view of the limited output, it became very necessary that such steel as was produced by each of the manufacturers be placed with the Governmental departments or Allies where it would do the most good in the prosecution of the war. This received very close attention, and each mill was constantly advised as to what products to make and the sequence of shipments governed by priority ratings as issued by the Priorities Division of the War Industries Board.

Large Requirements Met

"Not only did the Steel Division have to supply direct war needs, but it was confronted with increased building facilities in the United States for the manufacture of munitions and other Governmental supplies. The Railroad Administration, further, required a very large number of cars and locomotives to meet the increased demands of transportation. In addition to bringing about concerted action and concentration on certain products, the office of the Director of Steel Supply, in conjunction with other divisions of the War Industries Board and the Council of National Defense, restricted the use of steel in certain industries, and the steel thus saved by these restrictions of operations in industries less essential was diverted to Governmental needs. The most prominent example would be in plates, which were needed for shipbuilding purposes. The Emergency Fleet Corporation, as well as the Allies, had arranged a very extensive program in shipbuilding, and at the time plate production had never exceeded 4,000,000 tons per year. It soon became apparent that to meet the shipbuilding program, as well as the car and locomotive requirements, at least 6,000,000 tons of plates would be required per year. Through efforts as mentioned above the production of plates has been increased to this rate. This example is only indicative of many other similar cases of shell steel, rails, etc.

Coal and Coke Supply

"The Steel Division, through the Pig Iron Department, has been in daily touch with the Fuel Administration, and by concerted action has been successful in arranging satisfactory supplies of coal and coke, which were limiting factors during the fall of 1917 and the winter months of 1918. After the problem of transportation and coke was solved, it was then resolved into a matter of distribution, directing the efforts of the mills to first take care of the urgent war necessities. This has been accomplished successfully, and as far as has been determined, no department of the Government has suffered for steel, nor have the Allies, on any important war program. The manufacturers of iron and steel have given their best co-operation to this office at all times, and nothing but praise canbe spoken of the committee of iron and steel manufacturers for the great efforts they have made in meeting the Government demands. They have always operated in accordance with instructions, and have set aside all personal business interests to meet the Government demands.

Price Reductions

"About the time the office of Steel Director was created it became evident that prices must be controlled, as the scarcity of iron and steel was so acute that almost any price would be paid to secure tonnage. Therefore, through the War Industries Board, with the approval of the President, prices were regulated from time to time, and were fixed on a basis that was fair to both manufacturer and the Government. In many products the reduction in prices amounted to 75 per cent. For example, plates were selling from 8 to 14 cents per pound, and the Government price was fixed at 3¼ cents per pound. This price fixing resulted in a saving to the public, the Government and the Allies unquestionably of hundreds of millions of dollars, based on prices in effect prior to the creation of the office of Director of Steel Supply."

Lining Up Machine Tools

Another interesting section of the report deals with the operations of the Machine Tool Section:

"In the fall of 1917 this section, in order to obtain an idea of machine tool production of the country, requested manufacturers for shop schedules, giving their output in detail per month and indicating sold and unsold proportions of the output. These figures were supplied for five months, from October to February inclusive, and when tabulated under types and sizes indicated what machines were probably being produced in sufficient quantity, over-produced and under-produced. This condition, of course, changed daily. No attempt has been made to keep a running inventory of machine tool production.

"As a result of this inventory it was possible to advise the War Trade Board as to modifications of its conservation list, which had included machine tools. This permitted the export of such tools as were shown to be over-produced, the maintaining of which tools in this country, of course, imposed a hardship on the manufacturer. The utilization of machine tools held for shipment at seaports, some of which were for neutral and some for enemy countries, was also made possible by obtaining lists from various factories showing all



MEMBERS OF THE PIG IRON SECTION OF THE STEEL DIVISION OF THE WAR INDUSTRIES BOARD

Left to right—First Row: L. W. Williams, Assistant Director, Park & Williams, Philadelphia; Jay C. McLauchlan, Pickands, Mather & Co., Cleveland, Director of the Pig Iron Section; J. Leonard Replogle, Wharton Steel Co., Chief of the Steel Division; J. W. Dickson, E. W. Mudge & Co., Pittsburgh.

Upper Row: L. R. Smith, Matthew Addy Co., Philadelphia; S. R. Leonard, Oneida Community Co., Oneida, N. Y.; R. S. Stephenson, M. A. Hanna & Co., Pittsburgh.

shipments made in the last five months to countries other than England, France, Italy and Japan. On this list were specified the selling and forwarding agents and the warehouses where the machine tools were stored. This list gave the Government a source of immediate supply for many tools urgently needed both here and by the Allies, and steps were taken to render such machines available for this purpose. The selling agents for these machines, as a rule, had contracts permitting them to sell only in those neutral or enemy countries to which they could not ship, but notwithstanding such contracts many machines were being released at high prices and dealt in by unscrupulous dealers, so that our Government, the Allied Governments and American subcontractors frequently bought such machines at prices materially above those which should have been charged. By an arrangement between this section and the War Department, a plan was devised by which the commandeering power of the War Department was used in such a way as effectually to remedy this situation."

Snyder Ore-Carrying Fleet Makes Record

PITTSBURGH, PA., Dec. 10.—The ore-carrying fleet of W. P. Snyder & Co., Pittsburgh, consisting of five vessels, broke all records during the season just closed in the amount of iron ore transported from the Lake Superior ore region. In a little less than seven months 1,010,680 tons of ore were brought down the Lakes in addition to which 790,473 tons of coal and 66,652 tons of wheat, equivalent to 2,063,000 bushels, were moved.

This record has been brought to the attention of Chairman Hurley of the United States Shipping Board, who is strongly advocating loading and unloading facilities for ocean-going vessels similar to those used at Great Lakes ports. Mr. Hurley stated some months ago that, if rapid loading and unloading facilities were made available throughout the world for the American merchant marine, it could successfully compete with ships of other nations despite the high costs which have always worked to the disadvantage of American shipping.

The Nordberg Mfg. Co., Milwaukee, is engaged in the construction of one of the largest mining hoists ever built, for installation in the mines of the Quincy Copper Co. in the Upper Peninsula of Michigan. The hoist is designed for a depth of 10,000 ft. The present largest hoist is operating at 6000 ft.

Buffalo Ship Builder Launches First of Twenty-four Steel Barges

The Ferguson Steel & Iron Co., Buffalo, on Dec. 7 launched the first of 24 steel barges, for which it has contract from the United States Railroad Administration for service on the New York State barge canal. The barges are uniform in design, 150 ft. long, 20 ft. wide, with a draft of 12 ft. Each barge will weigh 150 tons and have a carrying capacity of 2000 tons. The barges have the new model ends, which the Ferguson Co. engineers helped to design. Five more of these barges are on the ways and nearing completion. In addition to the barges the Ferguson company has contracts for six sea-going tugs for the U. S. Navy. Two of the six are nearly completed and keels of two others have been laid. The steel for these barges and tugs has been fabricated at the Bailey Avenue plant of the company and will be assembled at its shipyard plant on Buffalo River. The launching of Saturday was the first from the new yards, which were completed the past summer.

The Jones & Laughlin Steel Co., Pittsburgh, has filed plans for the construction of three new buildings on Longworth Street, to cost $50,000. The structures will consist of a five-story crusher works, one-story crusher building and four-story coke-screening plant.

Business Men Attack Many Problems

Five Thousand Attend Conference at Atlantic City

Will Send Delegation to Offer Assistance to Peace Delegates at Versailles—President Farrell Strongly Opposes Boycott of German Goods—John D. Rockefeller, Jr.'s, Industrial Creed Is Indorsed—Price Maintenance Policy Discussed by Steel Group

BUSINESS men to the number of nearly 5000 journeyed to Atlantic City last week and took part in the reconstruction conference called by the Chamber of Commerce of the United States. A vast number of resolutions were presented at meetings of committees and groups, but all resolutions went ultimately to the Clearance Committee, whose report to the general session Friday represented, as nearly as possible, the prevailing opinion of all the minor meetings.

The general plan, which was an elaborate one, provided for the meeting of 381 war service committees Tuesday, whose resolutions were to be passed on to 35 related groups meeting on Wednesday, which in turn submitted their conclusions to 10 major groups, whose meetings were held on Thursday. Although some of the smaller committees did not meet and there was more or less confusion, the plan was carried out to a large extent. At the general sessions held in the large auditorium on the pier, when there were no committee meetings, speeches were delivered and important subjects discussed by men prominent in the official and business life of the nation. The labor situation which was conceded by all to be one of the utmost importance received a large share of attention, and it was noteworthy that the attitude of the employers was conciliatory and that there was a very strong sentiment in favor of representative government such as was adopted a year or so ago by the Colorado Fuel & Iron Co. and recently by a number of steel companies. While for the most part the sentiment was strongly opposed to Government control of industries, major group No. 3 consisting of representatives of the iron, steel, machinery and related industries voted down a resolution which declared in favor of discontinuing on Dec. 31 the price-fixing policy of the Government. The vote stood 63 to 81, the majority being composed largely of buyers who have stocks of iron and steel products on hand and would suffer if prices were reduced.

The Associated Business Papers, Inc., New York, representing the trade, technical and industrial press of America, made a decided hit in publishing a daily paper throughout the convention called the *Reconstruction Conference Daily*. This paper, with W. H. Onken, Jr., editor of the *Electrical World*, New York, as editor-in-chief, and a corps of 35 associate editors, published a four-page, eight-column newspaper giving complete accounts of the proceedings of the meetings and discussing many important subjects relating to post-war conditions. The conference adopted a resolution expressing its appreciation of "this splendid service and the spirit which inspired it."

Among those upon whom a very large share of the work of arranging for and carrying out the conference devolved were Jesse H. Neal, secretary Associated Business Papers, Inc., and W. H. Manss, director of the War Service Committee of the Chamber of Commerce of the United States.

H. A. Wheeler, president of the Chamber, presided at the general sessions and at the meeting Wednesday morning delivered an eloquent address. He declared that the foundation stone of political and economic reconstruction would be laid in the peace treaty. Men in business, he said, may not be regarded as competent advisors in matters of diplomacy and statecraft as affecting political reconstruction, but the diplomat or statesman may not be a wholly competent advisor in matters of economic reconstruction.

Resolutions Adopted by the Conference

The report of the Clearance Committee on Resolutions which was adopted by the conference Friday eliminated many of the resolutions which had been presented and confined itself to a few subjects which were considered more important. The part of the report which aroused the greatest enthusiasm authorized the president of the Chamber of Commerce of the United States, after consultation with representatives of other appropriate bodies, to appoint a commmission of American business men to go to Europe without delay for the following purposes:

To be available to the peace delegates of the United States for any needed information which they may be able to present or for any other aid which may be given by the business men of the United States through the medium of such a commission.

To study at first hand the reconstruction needs of European countries in conjunction with business men of these nations in order to advise the business men of the United States as to how they may be most helpful in meeting the necessities of Europe and caring for the interests of American industry and commerce.

In addition to taking this action, the general session approved numerous affirmations covering four general propositions: First, labor and capital are partners, not enemies, and both should be represented in industrial affairs; second, a generous policy should be adopted in foreign trade toward the Allies, especially during their period of readjustment and reconstruction; third, Government ownership would stifle the economic growth of the country; but fourth, constructive Governmental supervision of industry by friendly bodies would be proper and helpful.

Other recommendations adopted by the conference in the form of resolutions reported by the Clearance Committee were as follows:

That cancellation of war contracts be promptly and equitably adjusted and that legislation be enacted, if necessary.

That all war restrictions on industry be removed as soon as practicable.

That all obstacles to reasonable co-operation in industry be removed by legislation.

That men of broad business experience be appointed to fill two vacancies on the Federal Trade Commission.

That the principles of the industrial creed enunciated at the conference by John D. Rockefeller, Jr., be adopted.

That any tax law shall provide that during post war times the taxpayer be allowed to make a deduction from his apparent profit by way of a reserve for a subsequent shrinkage in the value of merchandise.

That legislation providing for returning the railroads to their owners be enacted with permission to pool equipment.

consolidate ownership and in other ways effect economies without destroying competition.

That legislation necessary to insure the stability of the merchant marine be enacted.

That a council to be advisory to the War Service Executive Committee of the Chamber of Commerce of the United States be constituted, the members to be the chairmen of the war service committees.

The conference also adopted a resolution in opposition to Government ownership of telegraphs, telephones and cables.

Mr. Schwab on Labor and Merchant Marine

Charles M. Schwab spoke with great earnestness and in his happiest vein in his address at the general session Wednesday afternoon. He praised the workingmen of the United States for the part they had taken in helping to win the war, especially in the building of ships. Referring to the future operation of ships as a part of the merchant marine he said:

"I do not care what plan, in the opinion of our great legislators at Washington, may be best for the operation of these ships so long as they are operated economically and so long as the expense of operation is not borne by any one or few, but by the whole people. No American shipping can be profitable or successful or enlist private capital to-day, as shipping is now operated, and the great chambers of commerce of the United States and you, the people who constitute these chambers of commerce, and you, the manufacturers of the United States, must raise your voices for the successful operation of our mercantile marine. Do not let the cry that a few may profit by subsidies or otherwise deter you in the least. I do not care in what form the people pay the bill. If the Government operates the ships directly and it operates them at a loss the people pay the bill. If the ships are operated by private concerns and a loss accrues that is made up in some form of subsidy, the people themselves pay the bill. So that whatever form may be adopted we must find the means of doing it.

"I do not hesitate to say, however,—not as a politician, because in that I have never had any part—I do not hesitate to say as an American business man that the real development of any great enterprise depends on the individual initiative of the American business man. I do not believe we will ever get the full economical development of any great branch of American industry that is not developed under private enterprise and by private capital. You may guard it in any way you see fit, by such laws and regulations as will not hamper its operations. But, gentlemen, point me if you will to any great industry of transportation or other development that has not been the result of the initiative of a few enterprising citizens in its inception.

"I am one of the men who believe in the fairness of American labor. I am one of the men who believe that the only foundation upon which any of these things can permanently rest is the economic use of everything, whether it be labor, material, manufacture or what not. Any foundation of organized labor or capital that is on a false basis must fail."

Continuing, Mr. Schwab said he is not opposed to organized labor. He believes that labor should organize in individual plants or among themselves for the better negotiation of labor and the protection of their own rights; but the organization and control of labor in individual plants and manufactories, to his mind, ought to be made representative of the people in those plants who know the conditions; that they ought not to be controlled by somebody from Kamchatka who knows nothing about what their conditions are.

Has Labor Received Its Share?

BY CHARLES M. SCHWAB

I seriously doubt many times whether labor has received in the years gone by its fair share of the prosperity of this great country. We, as manufacturers, have got to open our eyes to a wider vision of the present and the future with reference to our workmen. We have got to devise ways and means by which capital and labor, that have so often been termed synonymous, shall share equally, not in theory, but in practice. We have got to devise ways and means of education. We must not only talk about these things but we must do these things. The thing we have to do is to teach, not patronize, to educate and have the American laborer know and feel that he can stand with his head in the air, as you can and as I can, and say with pride, "I am an American citizen."

Secretary Redfield's Talk

Secretary Redfield said that if it were permitted him to urge a few words of practical advice to American industry, he would say "Beware of the temptation hastily to lay rash hands upon wages." Continuing, he said:

"Find and seize hold upon all science has said or can say concerning industry. It was largely because Germany made her industries the operating end of her sciences that her commerce grew so fast and so powerful. It was more German science than German wages that made her competition dangerous. The responsive power of well paid and contented labor to farsighted leadership in industry is the greatest force in production, and happy are they who have it behind them. If we resort, as others have done, to favors or subsidies, or other adventitious advantages, we must not object if in the coming days rivals seize hold of similar ways. We ought not to have to look to a commercial future in which weapons of this sort will be eagerly grasped to carry on commercial war. There lies not the path of safety or peace, but instead the way of danger. Not selfishness, not the sheer desire for personal or even national wealth must control, but the spirit of profit through service. There and there alone is security."

Mr. Rockefeller's Industrial Creed

John D. Rockefeller, Jr., was enthusiastically greeted and also applauded many times when he addressed the conference. He said that there were four parts to industry—capital, management, labor and the community—and submitted an industrial creed to which in substance he hoped they would be able to subscribe. The creed follows:

1. I believe that labor and capital are partners, not enemies; that their interests are common interests, not opposed, and that neither can attain the fullest measure of prosperity at the expense of the other, but only in association with the other.

2. I believe that the community is an essential party to industry and that it should have adequate representation with the other parties.

3. I believe that the purpose of industry is quite as

much to advance social well-being as material well-being, and that in the pursuit of that purpose the interests of the community should be carefully considered, the well-being of the employees as respects living and working conditions should be fully guarded, management should be adequately recognized and capital should be justly compensated, and that failure in any of these particulars means loss to all four.

4. I believe that every man is entitled to an opportunity to earn a living, to fair wages, to reasonable hours of work and proper working conditions; to a decent home, to the opportunity to play, to learn, to worship and to love, as well as to toil, and that the responsibility rests as heavily upon industry as upon government or society, to see that these conditions and opportunities prevail.

5. I believe that industry, efficiency and initiative, wherever found, should be encouraged and adequately rewarded, and that indolence, indifference and restriction of production should be discountenanced.

6. I believe that the provision of adequate means of uncovering grievances and promptly adjusting them is of fundamental importance to the successful conduct of industry.

7. I believe that the most potent measure in bringing about industrial harmony and prosperity is adequate representation of the parties in interest; that existing forms of representation should be carefully studied and availed of in so far as they may be found to have merit and are adaptable to the peculiar conditions in the various industries.

8. I believe that the most effective structure of representation is that which is built from the bottom up, which includes all employees, and, starting with the election of representatives in each industrial plant, the formation of joint works committees, joint district councils, and annual joint conferences of all the parties in interest in a single industrial corporation, can be extended to include all plants in the same industry, all industries in a community, in a nation, and in the various nations.

9. I believe that the application of right principles never fails to effect right relations; that the letter killeth and the spirit maketh alive; that forms are wholly secondary while attitude and spirit are all important, and that only as the parties in industry are animated by the spirit of fair play, justice to all and brotherhood, will any plans which they may mutually work out succeed.

10. I believe that that man renders the greatest social service who helps to afford to the largest number of men the greatest opportunity for self-development and the enjoyment by every man of those benefits which his own work adds to the wealth of civilization.

Profound Belief in Human Life

BY JOHN D. ROCKEFELLER, JR.

In the days when kings and queens reigned over their subjects the gratification of the desires of those in high places was regarded as of supreme moment, but in these days the selfish pursuit of personal ends at the expense of the group can and will no longer be tolerated. Men are rapidly coming to see that human life is of infinitely greater value than material wealth, that the health, happiness and well-being of the individual, however humble, is not to be sacrificed to the selfish aggrandizement of the more fortunate or more powerful. Modern thought is placing less emphasis on material considerations. It is recognizing that the basis of national progress, whether industrial or social, is the health, efficiency and spiritual development of the people. Never has there been a more profound belief in human life than to-day.

William B. Dickson on Post-War Problems

Related groups 8 and 9 on steel and iron production met jointly at the Hotel Traymore, Wednesday evening, with the chairman of group 9, Thomas Earle, Bethlehem Bridge Co., Bethlehem, Pa., presiding. A. L. Johnson, vice-president and general manager Corrugated Bar Co., Buffalo, made an extended address, in which he took a rather gloomy view of the prospect of America being able to compete with the European countries. He referred particularly to the extremely low wages which had prevailed in Belgium before the war and predicted that after Belgium had rebuilt its steel plants and finishing mills with the latest improved machinery made in the United States it would be a dangerous competitor. He advocated the establishment in foreign countries of branch plants of American companies. He urged the continuation of the price maintenance policy of the Government for at least six months after Jan. 1.

Howard Fitch, president Kansas City Structural Steel Co., Kansas City, Mo., urged the importance of business men doing everything in their power to give returning soldiers at least as good a chance to earn a livelihood as they had before the war. He vigorously condemned the principles of the American Federation of Labor and expressed the opinion that, as a result of the war, employers had come to have a better understanding of labor problems than they had in earlier years.

William B. Dickson, vice-president Midvale Steel & Ordnance Co., New York, upon being introduced, made a few preliminary remarks, saying that he thoroughly had enjoyed the addresses of the gentlemen who preceded him and was glad to follow them, especially as he did not agree with them entirely. As to the competition of Belgium, Mr. Dickson remarked: "I was vice-president of the United States Steel Corporation for 10 years, and despite very strong competition from Belgium and other countries, we managed to export from 10 to 15 per cent of our product."

Continuing Mr. Dickson said:

Mr. Dickson Gives Reasons for Optimism

"Now that the war in defense of civilization has been gloriously won, and it has been demonstrated in the face of German autocracy and bestiality that there is a supreme moral force in the universe, the question uppermost in the minds of most business men, as their thoughts instinctively turn again to normal ways of living, is whether we are about to enter an era of 'good times' or 'bad times.'

"It has been demonstrated over and over again in our history that the principal difference between good times and bad times is in the mental attitude of the American people. As Shakespeare has so aptly put it, 'There is nothing either good or bad, but thinking makes it so.'

"Take as an illustration some of the startling fluctuations which we see in the market values of the securities of our large corporations, in which it is not uncommon to see a variation of five points between 10 and 3 o'clock, representing an increase or decrease in the value of the company amounting to many millions of dollars. No thinking man, of course, supposes that there is any real change in values back of these securities at all commensurate with the apparent change.

"I would like to say at the outset that as far as the business with which I am connected is concerned I am an optimist with a great big O. At this critical period we need to have the fact emphasized that never in the

history of our country have basic conditions been so sound as they are to-day.

"It has been estimated by eminent banking authority that in 1914, at the beginning of the war in defense of civilization, this country was debtor to Europe to the extent of about $5,000,000,000; while at the conclusion of the war Europe is a debtor to us to the extent of $10,000,000,000. Our crops are abundant, and the liquid resources of our people, especially of the great agricultural West, were never so great, nor our purchasing power so large a factor in the industrial life of the nation. Back of all these physical resources we have as a sheet anchor the Federal Reserve banking system, by which the united financial strength of our great nation can be mobilized to an extent that was never before possible in all human history. The unfailing energy of the American people, under such conditions, will quickly turn from war to peaceful pursuits, and with such ease and lack of serious shock as will astonish the world.

"It would be folly, however, to ignore the fact that there are possibilities of serious complications. There are two classes which, in my opinion, are dangerous elements in this critical period of readjustment which we are now entering:

Employer Who Sees Red

"First: The reactionary employer, who sees red at the mere mention of anything pertaining to the rights of the laboring man, and who should adopt as his trademark an ostrich in its proverbial attitude.

"While I am not able to follow Mr. Gompers in all of his conclusions, I do agree with him most emphatically in his statement that in our free America the day of the autocratic employer has passed, never, I hope, to return. As Mr. Gompers recently stated, the Bolsheviki are not all to be found in the ranks of labor.

"When a man, or a number of men, for their own ends create a great industrial unit, they assume an obligation toward the human elements in that unit, and through them to society in general, which cannot be canceled or suspended arbitrarily. I subscribe to the doctrine that human labor is not a commodity in the ordinary sense of the term.

"In a completely natural society every man, by reason of close and continuous contact with land and other natural resources, would be an independent, self-sustaining unit. When a man has left this natural condition, whether voluntarily or otherwise, and has become the servant of another man, or other men, he has given up a natural right, and his employer has assumed an equivalent obligation. The fact that neither the employer nor the employee has been conscious of this exchange, and that both may have acted from purely selfish motives, does not alter the elemental fact which, in the great national aggregate, constitutes the great unanswered problem of modern times, the elemental fact that is found at the base of all social unrest.

Demagogic Labor Leader

"The other menace is the demagogic labor leader, who, for his own selfish purposes, plays upon the ignorance, prejudice and credulity of his fellows, and attempts to ignore economic laws.

"The fact that, after all, the real measure of wages is not the sum received, but the purchasing power of that sum, ought to be a platitude which any public speaker should be ashamed to utter in the presence of intelligent men. The fact remains, however, that this fundamental truth is not generally appreciated, either by wage earners or wage payers.

"There should be no attempt at arbitrary reduction of wages. If prices of commodities are too high they must be reduced to the point where manufacturers, or consumers, will be encouraged to buy, and then wages, regardless of the fulminations of any man, or any organization, under the irrevocable law of supply and demand, will seek and find their natural level. Any attempt on the part of labor demagogues to sweep back this wave of natural adjustment will be about as effective as that of the famous Mrs. Partington to sweep back the Atlantic ocean.

"Wage earners, under such conditions, would quickly find that high wage rates, while very pleasant sounding to the ear, are only effective when translated by actual work into wage payments. Employers, on the other hand, should realize that, while the wages which they are paying may seem very high as compared with previous levels, there may not be very much of an advance when these wages are translated into terms of purchasing power.

"These problems should be approached, not in a spirit of class prejudice, but in that of the loving-hearted Lincoln—'With malice toward none; with charity for all.'

"In Revolutionary days our forefathers succeeded in laying the foundations of political democracy, and the fact that the ideals upon which the American Republic was founded have survived the storm and stress of almost a century and a half shows that they laid these foundations both broad and deep.

"In recent years the sentiment of the American people has been slowly crystallizing around the idea of industrial democracy. I am in complete sympathy with this sentiment, which I believe to be in harmony with the ideals upon which our Government was founded, and for which the world has agonized during the past four years.

"I believe that the greatest task to which American employers must address themselves is the devising of practical ways in which labor can be given the full recognition to which, as an equal partner, it is entitled. I make this statement with absolute confidence in the fairmindedness of the American workingman when he is fully informed and is entirely free to act. If I did not have this confidence I would despair of the future of our free institutions.

In an address delivered by me in 1915, I said:

> The individual workman, dependent on his own strength and resources, cannot hope to bargain on equal terms with the corporation. If he cannot do so, he is no longer a free man, but a serf; and the serf has no place in the future of America.

"I believe, therefore, that one of the first steps necessary to inspire the workmen with confidence in the sincerity of the employers' recognition of the proper status of labor is the adoption of a fair system of collective bargaining. I also believe that in the near future the workmen must become partners through some system of profit sharing. No scheme could be adopted which would be applicable to all business, as each company would have to adapt the general idea to its peculiar conditions.

Chairman Baruch's Tribute to Business Men

(From letter to President Wheeler of the Chamber of Commerce of the United States)

I say with the greatest earnestness that the various departments of the Government are not alone willing, but most anxious, to receive suggestions from the business men, and I feel that it is not alone the privilege, but also the duty of business, to indicate to Government its needs and their proper solution.

At the close of the activities of the War Industries Board it is but simple justice to express our appreciation and gratitude for the loyal support given us by the industries of the nation. As chairman of the Board, I offer on behalf of my associates and myself a tribute of thanks for the patriotism and devotion shown by the entire commercial body of America. Its members have made service and not profit their rule. They have shown a desire and willingness to subordinate self and exalt public interest, and to this readiness to make sacrifice in the common cause has largely been due whatever success we have been able to attain. I would be doing the industries of America an injustice if I did not make this acknowledgment.

"Probably the largest question with which the American people will have to deal in the immediate future is how to secure the re-entrance into peaceful pursuits of the soldiers now in camp and on active service abroad. To accomplish this task with a minimum of hardship to wage earners and wage payers will require the most earnest, patriotic and unselfish efforts on the part of all concerned.

"I am not a pessimist on this subject, as I have confidence in the ability of our people to adjust themselves with reasonable promptness to the abnormal conditions which must be brought about by the necessity for the reentrance of these fighting men into peaceful pursuits. At the same time I cannot forget that as late as February, 1915, thousands of deserving, hard-working men and women in New York were, due to lack of employment, reduced to such straits that they were able to exist only through the charity of the municipal authorities and individuals. You, of course, will recall the distressing accounts which appeared in the papers at that time, of the long rows of men and women standing in line in the cold rain of a February night to receive a roll and a cup of coffee. In view of the possibility of a recurrence of similar conditions it would seem to be advisable to take some action to forestall the possibility of any man or woman able to work, suffering in our midst for the necessities of life because of the lack of employment.

Ways of Employment

"The only business-like way that this could be done on a sufficiently large scale would be for Congress, in co-operation with the State legislatures, to decide upon some comprehensive scheme of public works, such as drainage of swamp lands, irrigation of arid tracts, reforestration, large impounding reservoirs and water powers, State highways, canals, etc.

"The necessary engineering plans could be prepared in advance, tools purchased and carried in some State repository, and then when the emergency arose employment on these works could be offered to all citizens at a rate of wages slightly below that prevailing in the industries in which these men would ordinarily be employed. The maintenance of this lower rate would insure the return of the workmen to their normal occupations when the emergency was past.

"These projects could be planned in small units, so that even if the depression did not last long enough to complete a particular unit it could be completed under normal conditions at comparatively small expense, and thus become immediately available. These public works offer the quickest means by which to meet a possible great emergency. They should, however, be supplemented by an even more comprehensive plan by which men can be not only placed on the land but kept there, and thus counteract the baneful effects of congested factory centers in our large cities. Such a plan must not only provide through the National Government arable land, but also houses, tools, stock and seeds, on a basis which will secure the Government, and at the same time give the tiller of the soil an opportunity to obtain some return for his labor with reasonable promptness.

"The magnitude of the problem presented by peace will be in direct ratio to those of the war, and we must learn to think in terms commensurate with the importance.

"While, as I stated at the outset, I am an optimist as to the immediate future, I am not blind to the fact that there are some clouds on the business horizon. Uncertainty is the greatest foe to business, and there are two conditions of fundamental importance which need to be cleared up with the least possible delay.

Federal Taxation

"First: The uncertainty regarding the amount and character of Federal taxation has been and continues to be a serious handicap upon all business men. The delay in Congress in passing this vital legislation amounts to a national scandal. Within four weeks of the close of the tax year business men are still utterly in the dark as to the character and extent of their Federal tax obligation.

"The President said in his message:

> For the steadying and facilitation of our own domestic business readjustments, nothing is more important than the immediate determination of the taxes that are to be levied for 1918, 1919 and 1920. As much of the burden of taxation must be lifted from business as sound methods of financing and government will permit, and those who conduct the great essential industries of the country must be told as exactly as possible what obligations to the Government they will be expected to meet in the years immediately ahead of them, it will be of serious consequence to the country to delay removing all uncertainties in this matter a single day longer than the right processes of debate justify. It is idle to talk of successful and confident business reconstruction before those uncertainties are resolved.

A Heavy Liability

"Second: One of the great dangers of the situation is that the Administration has incurred a heavy liability toward labor, and one which in my opinion, in the nature of the case, cannot be met because of the inexorable working of economic laws. Great mischief, however, may be done by those in authority in a futile attempt to repeal or suspend these economic laws. From mistaken motives of humanity the Administration may attempt to cut off the dog's tail an inch at a time.

In last week's IRON AGE the following editorial appeared, which I heartily indorse:

> The idea that demobilization of industry must proceed at a gradual pace is utterly uneconomic. Whereas, in going into war the war needs of steel were unknown, it is now perfectly well known that certain products on which steel works and machine shops have been busy for months, and are now busy in many cases, will be useless when made up. The sooner work is stopped on them, and their conversion into scrap determined on, or some other method of salvage, the better.
>
> If the continuance of work on useless products is prompted by the fear of temporary unemployment for a fraction of the country's workers, it is to be said that the sooner that problem is faced, the better. Constructive measures will be more quickly set in motion by an actual situation than by the fear of something impending. So far as the steel industry is concerned, its leaders have been generally credited with ability to apply means to an end, and it is hard to believe they would be under any delusion as to the vicious policy that has prompted recent action, or inaction, at Washington.

"As yet there has been no convincing evidence of the necessity for reduction in prices. When this necessity arises, whether it be soon or late, the situation should be squarely faced and no halfway measures attempted.

How Will America Use Prosperity?

BY WM. C. REDFIELD,
Secretary of Commerce

There is no doubt, humanly speaking, that prosperity lies ahead for America, but there is yet an unsolved doubt as to what use America will make of her prosperity. Do we think of our sister nations as twenty years ago a trust magnate thought of the concerns whose business he would like to grasp? We have outgrown that in our domestic commerce. I do not speak of it as being illegal—it is more illegal to-day in the minds of the business men than on the statute books, but when we get beyond the three-mile limit, are we going to be as far advanced in our thought as we are at home? Can we carry the spirit of American law where the law of America does not prevail? If we do not, we may become fat and rich and possibly win the contempt of the world in so doing.

A great steel man many years ago made the statement to his associates that the only way in which to handle a situation such as that which now confronts us was 'not to compromize with it, but to get under it.'

Cancel Wasteful Contracts

"In conclusion, in my opinion the greatest service which the Administration can render to the American people to-day is:

"First—To cancel promptly all wasteful contracts for war materials, making prompt and full compensation to contractors therefor.

"Second—To remove from business at once and completely all of the artificial restrictions which have been imposed on account of the war.

"In order to win this holy war the American people have cheerfully subjected themselves to artificial restraints of all sorts on their business and habits of living, but above everything we are a liberty-loving people, and we are not satisfied to have these restraints continue for a day longer than absolutely necessary to achieve the victory. We believe in the doctrine that everybody knows more than anybody, and we demand that everybody be set free from unnecessary restraint, so that all can utilize that knowledge.

"I am firmly convinced that American business is fully competent to handle this situation in a natural, evolutionary manner, if it is permitted to do so in its own way. The nation is ready and eager to throw its energies into normal channels, and the opportunity to do so cannot be given too quickly.

"Every business man should print in red letters on his business correspondence that phrase which a famous American statesman once used so effectively under similar conditions, 'The way to resume is to resume'."

Mr. Farrell Opposed to a Boycott

James A. Farrell, president United States Steel Corporation, had fully intended to be present, but was unable to leave New York on account of important business matters and his paper was read by O. K. Davis of the National Foreign Trade Council. It was listened to with close attention and frequently applauded. Mr. Farrell reviewed the history of the foreign trade of the country in recent years and called attention to the last speech of President McKinley, made at Buffalo the day he was shot, in September, 1901. Mr. Farrell said that McKinley's vigorous plea for foreign trade was the more remarkable as coming from one who throughout his public career had insisted on regarding protection of home industry as the cardinal principle of our domestic policy. He boldly maintained that a system providing for a mutual exchange of commodities was manifestly essential to the continued and healthful growth of our export trade, and he employed this memorable phrase: "We must not repose in fancied security that we can forever sell everything and buy little or nothing. If such a thing were possible it would not be best for us or for those with whom we deal."

"Everybody in these times," said Mr. Farrell, "is ready to concede the significance of the fact that the American industries presenting the most nearly unbroken record of prosperity and sustained labor employment are those which have been accustomed regularly to market oversea from 10 to 35 per cent of their products. Most men who think on the subject at all are prepared to go a step further and to concede that the production of commodities upon a competitive basis of cost, in amounts sufficient to supply home consumption and furnish materials for foreign trade will be the real basis of our future national strength and prosperity."

Continuing, Mr. Farrell said there can be no great revival of trade in countries where we hope for it most unless we are ready to provide capital for their development. We must enter into the industrial life of those countries, engage in enterprises with them and create out of their resources the new wealth from which will come our pay.

In regard to an economic war after the signing of peace, Mr. Farrell took a most emphatic position. He said:

"In this matter of 'economic warfare after the war,' there should be no ground for misunderstanding our position. An unrepentant Germany, still wedded to her idols of militarism and the relentless application of superior force, can establish no right to demand the raising of the economic blockade which has been a most potent instrument in ending the war. In pursuance of the policy of combining national and commercial interests, the German nation thought itself entitled to plunder its neighbors for its economic or commercial needs. This was Germany's policy of peaceful penetration in the economic sphere as the forerunner of the war of aggression which she launched in 1914. But when we have exposed German ambition and denounced German methods it would be a curious way of preventing their revival by committing ourselves to the acceptance of German principles. Only on the theory that the menace of Prussian militarism must survive can there be any reason found for looking to the future security of the world in the waging of a perpetual bloodless war, inspired by the same enmities, suspicions and fears that but lately divided the world. Nor can the fact be ignored that in a trade war, as in the clash of military force, the balance of slaughter must be reckoned with, since the casualties cannot all be on the other side. It is certain that if Germany is to be compelled, as she ought to be, to repair the wanton destruction she has wrought in Belgium, Northern France, Poland and Serbia, she must have access to the raw materials of manufacture, in the conversion of which into finished products she may earn the money that will be needed to pay her debts.

"As a matter of fact, given the frank acceptance by Germany of the terms of peace which will be dictated by the Allies, there can be no reason for separating her economic wants from those of the rest of Europe. These will be sufficiently imperative to use up all the surplus foodstuffs and raw materials that can be spared for many months to come."

Must Not Perpetuate Hatred

BY JAMES A. FARRELL,

President United States Steel Corporation

It is difficult to realize the colossal scale on which Europe will have to borrow to make good the destruction of war. Billions of dollars worth of property will have to be replaced and the demands of the work of reconstruction will be too vast to be met by private enterprise. In the presence of the gigantic needs of the war swept territories in Europe and of their poverty stricken population, any application of the old-time methods of competition must sound trivial. Co-operation on a large and magnanimous scale and in the most sympathetic spirit must be the rule if the economic recovery is to be quick and thorough. Moreover, we shall greatly lessen the possibility of perpetuating in the domain of commerce the hatred and bitterness engendered by the war if we refuse to be drawn into any convention, agreement or understanding that would make us parties to a boycott of the commerce of any of the nations that have been arraigned against each other.

In regard to the merchant marine, Mr. Farrell said that nothing but the shortsightedness of self-seeking politicians and the misplaced activity of injudicious friends of labor can prevent this great nation from becoming once more the foremost seafaring people of the world.

Meetings of Major Group No. 3, Iron and Steel

Major group No. 3, consisting of related groups on iron and steel production, gas motors, automobiles, engines, machinery, tools and power equipment, hardware and building materials, held meetings Thursday afternoon and evening. Arthur G. McKee, consulting engineer, Cleveland, presided. At the afternoon meeting a committee on resolutions was appointed with Frank Baackes, vice-president American Steel & Wire Co., Chicago, as chairman, to which were referred numerous resolutions which had been adopted by the related groups at earlier meetings. Addresses were delivered by Murray L. Sargent, chief of the Hardware and Tool Section of the War Industries Board, Washington, and ex-Patent Commissioner Thomas Ewing, New York. A paper by John N. Willys, president Willys-Overland Co., Toledo, was read by the secretary of the group. Mr. Ewing made an appeal for a stronger support of the patent office. Mr. Sargent ably discussed labor problems and said he believed the era of high wages is here to stay. Mr. Willys expressed the opinion that the automobile business had come back to peace stronger and better than ever and that its future prosperity would exceed that of the past.

At the evening session the committee on resolutions submitted 17 resolutions which it had approved. The first expressed the opinion that the price maintenance policy of the Government should be discontinued Dec. 31. After a brief debate this resolution was rejected by a vote of 63 ayes to 81 nays.

Other resolutions adopted as reported declared in favor of fair and reasonable allowance for depreciation in inventory values by the Federal Government in assessing taxes; favored taxation for 1918 only with such rates as necessary; declared in favor of repealing all the laws which prevent co-operation in business; advocated permitting of the establishing resale prices; favored improving the organization of the Patent Office so as to obtain more prompt and efficient service; urged the extension of foreign trade; advocated the restoration of the railroads to their owners; affirmed opposition to Government ownership or operation of the telegraphs, telephones, cables and mines; opposed changing the system of weights and measures; expressed the opinion that the President should consult during the peace conference with a committee of business men to be appointed by the Chamber of Commerce of the United States; favored the creation of a Federal highways commission and the building of national highways; protested against taxation of profits over those of any pre-war period; favored the creation of a central board of industry of the United States.

The above resolutions were sent to the Clearance Committee, whose action will be found in a preceding part of this report.

Two Sons Make the Supreme Sacrifice

John McKenzie of Jameson, McKenzie & Evans, iron and steel brokers, Baltimore, has received word that his son Robert, aged 30, has been killed in action in France and that a few days later, on Oct. 30, his son William, aged 21, died from wounds. A third son, Stuart, has written his father in regard to Robert's death. The letter with the note added by the censor is as follows:

American Expeditionary Force,
Oct. 3, 1918.

Dear Father:—

Our regiment has just come from the front after five days and nights of hell, in a drive where we advanced about 10 miles.

By the time you receive this, no doubt the Government will have notified you of Bob's death.

I will give you as much detail as to how it happened as I have been able to gather: We went "over the top" at dawn, and I saw him just after we went over. He was as happy as could be, smoking his pipe and trudging along with the rest of us. Later in the morning, we were separated by machine-gun fire. He was ordered, with two others, and his Lieutenant, to flank a machine-gun nest near a trench. They advanced and were about in position when they were all caught by liquid fire. Bob and the two others were killed, and the Lieutenant was wounded. He died a man and a soldier. Before falling he called his Lieutenant to give him a hand grenade, and after giving it to him said he was on fire.

A great many good men fell, and no doubt more will fall. As hard as it is, I suppose we will have to bear it cheerfully. It hurts me to think of you and mother, but I know the courage of both. I came through O. K., except we are all tired out.

I want to locate Bob's grave and arrange to have it marked, if I can.

The fact that he died a man and a soldier, doing his duty, is a great comfort to me. Received your letter yesterday, and do not understand why you have not heard from me.

Will write you more fully at our next stop; we are on the way to rest up now. Affectionately,

STUART.

Note added by Censor:

I violate a regulation by adding to a soldier's letter, but let me add my condolence in the loss of your son. Both your sons came under my personal notice; both were and are men—the big, clean American men a soldier admires. I miss him along with the entire company.

R. M. S.
Second Lieutenant, commanding the company.

Marine Equipment Company Merged

The American Balsa Co., Inc., has been organized with a capital of $1,000,000 to take over the business and property of the Welin Marine Equipment Co. and of the American Balsa Corporation. The directors are A. P. Lundin, chairman; R. C. Carpenter, J. F. Case, George S. Lewis, George Mixter, William Finlay Morgan, R. B. Sheridan, C. C. Stillman and Beekman Winthrop. The officers are George S. Lewis, president; A. P. Lundin, William Finlay Morgan and R. B. Sheridan, vice presidents; Cecil Page, secretary; and Percy Mayes, treasurer.

The business of the company is to develop the use of the wood from which the company takes its name. The balsa tree grows in all tropical countries, the principal supply at present coming from Costa Rica and Panama. The chief characteristic of the wood is its extreme lightness, the weight being one-third less than that of cork; it also possesses considerable structural strength, being about one-half as strong as spruce. The company holds patents on the use of the wood for insulating purposes, as in cold storage and refrigeration.

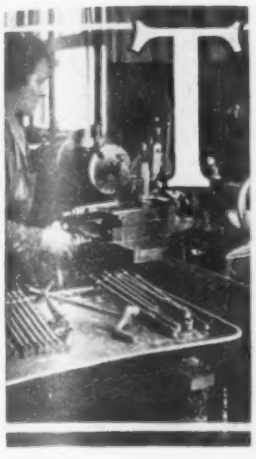
At present the American Balsa Co. is operating plants at Long Island City, Astoria, Long Island; on the Harlem River, New York, and at Delawanna, N. J., practically the entire output being taken by the United States Navy, the United States Army Transport Service, and the Emergency Fleet Corporation. The principal products are Welin davits and Lundin lifeboats, special buoys, balsa wood for airplane and hydroplane construction, life rafts and life preservers, and other marine life-saving devices used in the equipment of merchant and war vessels. Additions to several of the plants are now under way, and orders, particularly from the Emergency Fleet Corporation, will keep the company running at capacity for over a year ahead. The principal office will remain at 50 East Forty-second Street, New York.

The Crescent Refractories Co., Curwensville, Pa., has begun construction on betterments consisting of plant additions and mine improvements representing an expenditure of about $200,000. The company says that this work on its three plants is the initial stage of a considerable expenditure which it believes to be warranted by the outlook.

A Motor Company's Shop Training for Women

Intensive Work at Lincoln Plant Done in Threshold School—Women Employees Are Protected by the Enforcement of Rigid Rules

BY F. L. PRENTISS



THE extent to which women will be employed in metal-working industries under normal peace time conditions will probably not soon be known, but it is the common belief that their use, particularly for light machine and inspection work, will be more general than before the labor shortage during the war caused plants to fill their depleted ranks with women. One manager made the statement recently that women in shops were not doing men's work, but women's work that had formerly been done by men.

In speeding up production of war material women were put into factories with little preliminary training and often became parts of organizations that had had no experience in handling such employees. While patriotic motives and the high war-time wages sent many women to the shops, it is doubtless true that a large share of the women employees, especially those who will continue in some class of employment, will desire to stay in the factories. The training of women workers is expected to be given more attention than during the period when the energies of plant managers were turned almost wholly to war production. Welfare work among women employees is another matter that will probably be given much more attention hereafter than when attention was centered almost solely upon output.

The training of women employees by the Lincoln Motor Co., Detroit, during the war, was given much care, and the methods are highly interesting. The number of women employed in this plant at work on Liberty airplane motors reached as high as 900 to 1000, 25 to 30 per cent of whom were on inspection work, the remainder doing machine and assembly work. With the exception of those employed on inspection and the few in the assembly department, all were given a preliminary training in what the company designates as the Threshold School.

This school is in charge of a skilled machinist, having an engaging personality, patience and enthusiasm, and who gives all the instruction. There are only eight or ten girls in the school at one time, it being the plan to keep the attendance small, and their intensive training lasts for a week or ten days. The length of the period of instruction varies according to the supply of women and the factory demand. The aim is to have girls under training and ready for the factory when a requisition comes from the production foreman. About 1200 women have gone through the school to the factory. The hiring of women is in charge of a woman but the school director has the authority to discharge any girl who does not show promise of becoming a satisfactory machine operator. The policy of the company is to employ American-born women not under 21 years of age. The equipment in the training school includes a Whitney hand-milling machine, two Cincinnati No. 2 milling machines, a 14-in. lathe, a Warner & Swasey No. 2 screw machine, a No. 6 Gleason gear generator, a Leland-Gifford speed lathe, a Porter-Cable lathe, a small grinding head and benches.

In the training room several production and simpler tool jobs are provided. Women are put on the work with others who are partially trained, and watch the others work and ask questions. They are given some general experience on all the machines in order that they may develop confidence. It is not the purpose to make machinists of the women, but to make them skilled machine operators.

After going from the school to the machine shop a woman watches for a day or two the machine she is to operate and then that machine is turned over to her under the care of a job setter. Women after training are employed at production work on milling machines set for one operation so that loading and unloading fixtures and gaging form the principal work, the men having charge of the tools as well as setting up the machine; on hand milling machines on which they do a profiling operation; on drilling and reaming work, some of which is on multiple spindle drills; on lathes doing simple turning operations on light parts, using micrometer attachments on lathes and assuming responsibility for holding work to gage; on hand screw machines; on grinding machines doing both internal and external grinding on light parts, grinding cylinders and doing finished grinding, a very delicate operation, and on spline milling and broaching machines. One operation performed by the women that requires a high degree of training and skill is in end milling. Girls are employed in operating Gleason gear generators and are proving very satisfactory for this work. They do not set up these machines, but they load and unload them. Quite a number of women are also employed in welding cylinder jackets, most of the work being done with oxy-acetylene welders.

The women are paid 30c. an hour while taking the training course. Those doing machine work are usually put on piecework basis soon after entering the factory. It is stated that on work that calls for development of hand skill, such as loading light parts and fixtures rather than mechanical judgment, the women with their nimble fingers are better and quicker workers than men. They are found to be of a more receptive turn of mind than men, but not so amenable to discipline as men. However, the labor turnover of the women is less than that of the men.

The women employees work 9 hr. per day or 53 hr. per week. They are allowed two rest periods of 10 minutes each, one in the morning and one in the afternoon, during which they are admitted to the factory rest rooms by cards. These rooms are provided with comfortable willow and fiber chairs. There are three rest periods, one-third of the women being at liberty at one time. They use admission cards bearing the employee's name, and indicating the time of the rest period of the holder. These



LINCOLN MOTOR CO.'S EMPLOYMENT OF WOMEN

The Upper Picture Shows a Cafeteria for the Women Employees Where Good Food Is Provided at Low Cost and With Quick Service. The foyer, lower picture, is at the entrance to the cafeteria and provides a cozy, well lighted lounging room. The women have proved their efficiency in numerous tasks, four views of which are given: in machining and making the micrometer measurements of main bearing rods, shown in the circle; as operators on hand milling machines, the view to the right of the circle; water testing of intake headers and the inspection of motor parts such as valves and pistons, shown in the two pictures below the circle

cards are in three colors for the three rest periods. In order to visit the rest room during other periods a special pass must be secured from the woman supervisor or from a nurse in the welfare department. During the noon hour and after 4:45 p. m., the rest rooms are open and no pass is required. Women employees always have free access to the lavatories in rooms adjoining the rest rooms.

A large cafeteria is provided in a single story building centrally located. This is divided into two sections, one for the men and one for the women, with a kitchen in the center. At the entrance to the girls' restaurant is a large well-lighted foyer equipped with chairs, making an attractive lounging place for a few minutes after lunch.

While the women are not segregated from the men at their work the mingling of the two sexes outside of working periods is avoided as much as possible. Men's and women's entrances to the restaurant are at opposite ends of the building, so that the two sexes are not brought together during the noon rush and the women go to lunch 6 minutes before the men. At night the women stop work 12 minutes before the men so that they can get out of the plant and on their way home before the men stop. All women employees except office clerks are required to wear factory uniforms, two of which are supplied free by the company, and all machine operators must wear caps. In the shop hospital a room with a separate entrance is reserved for women. Strict surveillance over its women employees is the predominating feature. In the first place it is the policy to employ women of the better class and of good moral character, and after hiring girls who are entitled to respect the company insists that they shall be respected. The attitude of the company in regard to the treatment of women is the subject of a booklet bearing the title: "Announcement Regarding Women Workers in Lincoln Motor Co.," written by Henry M. Leland, president of the company. An employee on reading this booklet cannot fail to understand that the company has no mild measures for men who violate good conduct rules. One paragraph reads: "As emphatically as we can state it, we want it understood that the Lincoln Motor Co. plant must always be a safe place for any woman."

Foremen and subforemen are held personally responsible for the welfare of those in their departments and foremen are directed to immediately discharge any man guilty of misconduct. Flippancies that pave the way for improprieties are not tolerated. Foremen are instructed that no matter how good a mechanic a man may be, and no matter how helpful in getting out production, he shall not be retained if he does not live up to the shop standards of conduct. Women are forbidden to flirt or talk with men employees, inspectors, clerks or foremen. The penalty for violation of this rule is instant dismissal.

The women employees are carefully looked after by women in the welfare department, to whom they are instructed to go with any grievances, and this department has supervision of recreational work among women. It is the intention of the department to bind the women employees together by ties of goodfellowship and to create loyalty and interest in the plant so that it will mean more to the women employees than merely a place in which to work. Already there is a girls' club with its own officers that holds a dinner once a month, and the welfare department is now considering the development of various activities among the women workers such as an orchestra, a singing club and organizations for bowling, basket ball and other sports.

Factors in the Manufacture of High Grade Malleable Castings*

Malleable iron castings have always been known to their users as castings possessing ductility, but many of these same users think they should never be made with heavy sections due to their false belief that the castings cannot be annealed through. This idea is still in the minds of men who have been using malleable castings for years. Every effort should be used to correct this impression and convince them that heavy sections can be thoroughly annealed.

This contention, coupled with poor design of patterns, is the greatest difficulty the malleable foundryman has to contend with. I have seen failures of malleable castings where the user has changed to steel, and in comparing the malleable patterns with those for steel one would not know they were for the same purpose. The steel sections are always increased and ribs eliminated for the purpose of reducing shrinkage, whereas the failure of most malleable castings can be eliminated by changing the design. Abundant evidence is available to prove that good malleable castings can be used in place of steel.

The Secret of Annealing Heavy Sections

There is more or less of a trick connected wth making castings with heavy sections. First, you must get the metal high enough without too great a reduction in carbon, it being a known fact that carbon oxidizes much more rapidly than silicon and can be readily identified in the test piece by the short crystals. This condition with the silicon under 0.50 per cent cannot possibly give good results. The metal, however, can be changed in the furnace with the addition of low-silicon pig iron to increase the carbon.

Gating with heavy shrinkers and close attention to the ribs on any particular casting is very important. Chills can be eliminated in most cases and they should be as they do not correct the trouble but simply drive the shrinkage from one place to another.

We have experimented a great deal with our furnaces in reference to top blast, as it is my contention that excessive top blast not only causes more shrinkage but produces unsound and weak castings.

Eliminating Top Blast Pressure

We have adopted a method of practically eliminating pressure on the top blast and in doing this we do not have any trouble with high heats, as the firemen cannot force the heat to the extent of excess oxidation.

The blast at the tuyeres shows only two-thirds ounce, and I believe this accounts for the following results:

First Iron			Last Iron		
Test No.	Silicon, Per Cent	Total Carbon, Per Cent	Test No.	Silicon, Per Cent	Total Carbon, Per Cent
2	0.90	2.65	2	0.90	2.51
3	1.04	2.62	3	1.04	2.61
4	1.02	2.56	4	1.00	2.49
5	0.92	2.61	5	0.95	2.59
7	0.98	2.40	7	0.99	2.42

A furnace run to turn out uniform first and last iron, annealed with the use of pyrometers to insure the proper temperatures, is bound to give a tensile strength of 45,000 lb. and over per square inch with an elongation in 2 in. of 7½ per cent and over. This is a practical material for most uses.

There has been a great deal of confidence placed in castings showing a deep skin. This skin is carbonless iron produced with strong packing which absorbs the carbon from the outside of the casting. Such a skin can be increased by more than one annealing, but it does not show any great advantage over the casting annealed without packing or in a straight cinder packing.

*From a paper by J. G. Garrard, North Western Malleable Iron Co., Milwaukee, Wis., presented at the American Foundrymen's Convention at Milwaukee, Oct. 7 to 11.

The Portland Gas & Coke Co., Portland, Ore., is making plans for an addition to its briquetting plant at Linnton, at a cost of $75,000.

Iron and Steel Exports Decline Sharply

Unusual Conditions Connected with the War Affect the Movement—Shipment of Plates Largely to Japan—Imports Show Increase

WASHINGTON, Dec. 10.—Statistics of the iron and steel exports for October, 1918, show a decided slump in the tonnage, as compared with September, 1918, while the valuation figures of machinery were practically stationary. On the import side of the ledger the tonnage showed a remarkable recovery.

None of the figures, however, throws any light on the present situation. They cover a period when the war was still at its height and our shipping was practically monopolized by war demands. Export conservation rules and domestic retrenchment orders alike interfered to prevent a normal business. The figures, however, show that the iron and steel industry is a fair barometer of our foreign commerce because the aggregate statistics of our imports and exports reveal almost the same fluctuations as those of iron and steel.

The export tonnage of iron and steel in October, 1918, fell to 388,777 gross tons, the lowest figures reached since March of this year, when they were 382,195 tons. The October, 1918, figure is approximately only two-thirds of the October, 1917, total of 571,893 tons, and approximately 85,000 tons less than the September, 1918, total of 473,066 tons. For the 10 months ending October, 1918, the total is 4,531,618 gross tons, or more than half a million tons less than the 5,097,764 tons exported in the corresponding period of 1917.

The pig iron figures maintain the recovery marked in September, totaling 35,452 tons against 34,494 tons in September, 1918, and 47,200 tons in October, 1917. The export of scrap, which had disappeared entirely in September after reaching the low-water mark of 71 tons in August, reappeared in the list for October with 443 tons. Billets, ingots and blooms dropped from 135,450 tons in September, 1918, to 125,023 tons in October. Practically all of the minor items show decided slumps

Exports of Iron and Steel

	October		Ten Months	
	1917 Gross Tons	1918 Gross Tons	1917 Gross Tons	1918 Gross Tons
Pig iron	....	....	377,094	
Ferromanganese	3,406	52	4,545	5,456
Ferrosilicon	255	56	4,584	2,216
All other pig iron	43,539	35,344	174,746	207,423
Scrap	6,031	443	142,340	2,122
Bar iron	4,823	6,018	44,384	45,800
Wire rods	26,554	11,609	142,128	124,746
Steel bars	46,771	38,963	517,549	503,067
Steel billets, ingots and blooms, n.e.s.	204,724	125,023	1,677,364	1,572,375
Bolts and nuts	2,502	2,120	207,657	20,218
Hoops and bands	5,638	3,238	47,333	42,060
Horseshoes	812	241	7,229	2,590
Cut nails	329	152	3,349	2,353
Wire nails	13,660	6,065	87,881	64,145
Wood screws	217	.....	1,073	.....
All other nails, including tacks	1,659	1,040	16,225	9,805
Cast-iron pipes and fittings	4,350	2,439	59,532	52,372
Wrought pipes and fittings	10,042	5,889	108,219	73,832
Radiators and cast-iron house-heating boilers	249	161	4,673	2,015
Railroad spikes	2,507	381	17,920	8,329
Steel rails	48,531	49,495	422,453	375,625
Galvanized sheets and plates	7,156	2,914	72,190	58,708
All other sheets and plates	4,767	1,925	49,096	37,344
Steel plates	50,225	52,967	448,205	432,128
Steel sheets	15,537	8,275	120,439	144,430
Plates, punched and shaped (ship)	a2,861	2,575	a9,821	25,641
Structural iron and steel	20,776	13,265	243,222	188,820
Tin and terne plates	15,318	14,424	143,374	189,979
Barb wire	10,616	29,311	149,520	207,849
All other wire	18,035	13,392	164,682	132,481
Total	571,893	388,777	5,097,764	4,531,618

a Not separately enumerated prior to July 1, 1917.

Exports of Machinery

	October		Ten Months	
	1917	1918	1917	1918
Adding machines	$192,668	$149,996	$1,881,335	$1,542,934
Air-compressing machinery	77,034	342,012	865,459	2,198,723
Brewers' machinery	6,230	.....	103,129	91,826
Cash registers	26,157	22,778	694,479	540,210
Parts of	4,892	13,185	65,645	76,231
Concrete mixers	a57,757	19,344	a105,663	287,233
Cotton gins	5,316	3,798	74,471	85,249
Cream separators	58,040	74,852	526,016	647,967
Elevators and elevator machinery	200,225	160,403	1,871,617	1,609,098
Electric locomotives	10,625	.....	363,997	98,625
Gas engines, stationary	64,755	56,066	728,720	427,895
Gasoline engines	2,246,155	2,667,466	20,127,933	30,828,487
Kerosene engines	a378,319	752,763	a1,041,265	6,088,782
Steam engines	5,178,632	1,106,520	28,003,238	26,391,877
All other engines	140,681	1,040,906	3,209,465	4,176,947
Parts of	.....	.....	b9,287,245	.....
Boilers	a419,448	222,844	a1,288,426	2,631,201
Boiler tubes	a1,789,970	529,174	a3,395,762	4,888,273
All other parts of engines	a1,747,336	1,876,870	a5,884,335	19,656,729
Excavating machinery	a103,257	136,936	a283,035	1,162,307
Milling machinery, flour and grist	32,960	95,609	678,631	1,084,245
Laundry machinery, power	47,265	37,750	367,100	356,963
All other	23,259	24,674	224,820	195,924
Lawn mowers	24,046	21,903	190,609	159,743
Metal-working machinery (including wood-working tools)	.....	.....	b44,604,259	.....
Lathes	a1,787,379	799,775	a7,340,010	8,657,918
Other machine tools	a961,216	865,448	a3,522,817	8,880,024
Sharpening and grinding machines	a669,108	613,909	a2,283,312	5,428,637
All other metalworking machinery	a2,565,367	2,550,494	a9,288,485	20,567,241
Meters, gas and water	58,773	25,767	1,107,764	332,771
Mining machinery, oil well	129,276	216,957	1,144,617	2,208,195
All other	476,240	352,663	8,659,019	7,616,869
Paper-mill machinery	160,661	43,098	1,641,330	1,291,663
Printing presses	67,450	111,385	1,376,529	1,065,059
Pumps and pumping machinery	523,429	476,325	5,100,202	4,966,226
Refrigerating and ice-making machinery	176,983	79,518	1,012,127	1,150,735
Road-making machinery	34,100	32,395	125,764	541,774
Sewing machines	646,396	734,613	6,572,038	6,335,257
Shoe machinery	198,326	111,323	1,386,041	1,057,082
Sugar-mill machinery	1,734,054	805,976	6,929,636	6,944,858
Textile machinery	538,826	515,635	3,379,082	5,785,139
Typesetting machines	219,951	102,468	1,051,483	1,051,877
Typewriting machines	787,770	538,046	7,987,080	5,716,358
Windmills	125,182	41,049	955,932	634,279
Wood-working machinery, saw mill	49,662	104,545	490,694	845,897
All other	77,320	91,128	890,494	804,124
All other machinery and parts of	3,665,921	3,518,113	34,405,216	34,711,883
Total	$28,488,426	$22,586,479	$232,216,326	$232,841,730

a Not separately enumerated prior to July 1, 1917.
b Six months ended June 30, 1917.

while the heavy tonnage, such as rails and plates, held their own. Steel rails, in fact, showed an increase—rising from 43,868 tons in September to 49,495 in October, and steel plates, which increased from 47,975 tons, in September to 52,967 tons in October, 1918.

Of the steel rail exportation more than half, 25,879 tons was sent to France. Of the exports of steel plates the largest individual amount went to Japan—19,084 tons—while Canada received 14,206 tons and Italy 966 tons. Steel sheets fell from 15,933 tons in September, 1918, to 8275 tons in October. More than half of this went to Canada, 4240 tons. Structural iron and steel also revealed a decided decrease from 22,545 tons in

Imports of Iron and Steel

	October		Ten Months	
	1917 Gross Tons	1918 Gross Tons	1917 Gross Tons	1918 Gross Tons
Ferromanganese	2,035	200	40,910	26,471
Ferrosilicon	682	733	8,489	2,581
All other pig iron	2,156	....	18,831	1,973
Scrap	4,894	8,616	172,120	40,546
Bar iron	2	2	2,099	1,285
Structural iron and steel	591	628	4,646	2,694
Hoops and band iron	....	....	....	....
Steel billets without alloys	2,506	3,183	31,031	27,787
All other steel billets	610	255	6,657	6,247
Steel rails	668	1,196	7,068	6,762
Sheets and plates	78	5	1,111	1,383
Tin and terne plates	.....	.....	124	32
Tin scrap	a694	244	a6,797	5,459
Wire rods	3	438	518	7,506
Total	14,919	16,000	300,401	140,418

a Not separately enumerated prior to July 1, 1917.

Imports of Manganese Ore and Oxide

Manganese ore and oxide of	60,649	48,917	555,282	431,299

September to 13,265 tons in October. Here again Canada obtained the largest portion of the shipments, receiving 7337 tons.

The tin plate export also showed a decrease from 19,629 tons in September to 14,424 tons in October, Canada receiving 3603 and the Argentine Republic 3042 tons. The barb wire exportations dropped to 29,311 tons in October, 1918, against 33,691 in September. France received 17,936 tons and Italy 8095 tons. Of the other types of wire the exportations were 13,392 tons—against 16,546 in the preceding month; France received 6120 tons and Canada 1377 tons of the October exports.

The valuation figures on the exportation of machinery show a slight increase, rising from $22,068,916 in September, 1918, to $22,586,479 in October. The October, 1917, figure, however, was $28,488,426. Under the heading of gasoline engines—which includes automobiles—there is a drop from $3,410,942 in September, 1918, to $2,667,466 in October.

For the ten months ending October, 1918, the exports of machinery aggregated $232,841,730—practically identical with the figures for the same period of 1917, $232,216,326.

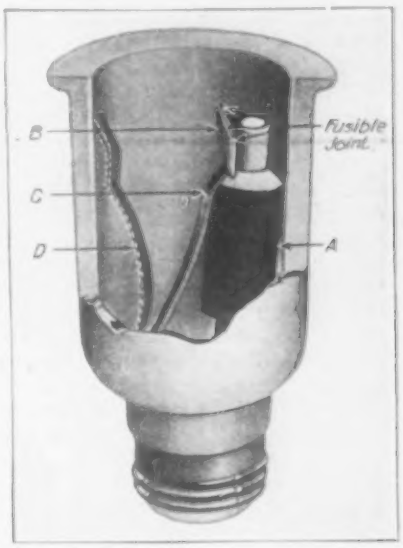
The imports of iron and steel recovered enough so that the October, 1918, figures exceeded not only the September figures for this year, but October, 1917, as well. In October, 1918, imports were 16,000 tons against 9330 in September, 1918, and 14,919 in October, 1917. The biggest item in this recovery is the rise in the imports of scrap, which increased from 2035 tons in September to 8616 tons in October, 1918, thus gaining fourfold.

For the ten months ending with October, 1918, the figures are still less than half of last year's totals. In 1918 they were 140,418 tons and in the preceding year 400,301.

The manganese ore and oxide of manganese figures dropped from the September total of 72,685 tons to 48,917 tons. In October, 1917, the importation was 60,649 tons. For the ten months ended with October, 1917, the importations of manganese ore and oxide of manganese were 555,282 tons, but valued at only $9,124,063, while the 431,299 tons imported in the first ten months of 1918 were valued at $13,158,216.

Protective Plug with Spring Contact Breaker

A special protective plug operating by means of a spring contact arm to automatically break the circuit in case of overload has been designed by the General Electric Co., Schenectady, N. Y., especially for its switch for connecting alternating current motors direct on the line. They are located immediately below the switch proper within the switch box.



Excessive Overload Acts to Melt Fusible Joint of Protective Plug, Permitting a Positive Breaking of the Circuit by Snapping Back of the Spring Contact Arm

The protective plugs contain a stationary contact post with heating coil *A* and a fusible link *B*, which binds a spring contact arm *C* to the post. The motor circuit is completed through the coil, post, link and spring contact arm. In case of an overload the current passing through the coil will heat the post sufficiently to melt the low fusible alloy that holds the link together, thus releasing the spring contact arm and causing it to take the position *D*, as shown in the illustration, thereby opening the circuit between the contact arm and the post.

These fusible links are renewed by slipping the link down over the end of the post and fastening the spring contact arm under at the same time. The successful operation of the protective plug is stated to depend upon the low fusing alloy band holding the link together, especially manufactured by the company for this purpose.

By reason of the time lag feature, it is asserted that the momentary inrush starting current will not cause the plug to open the circuit. The plugs are said to protect the motor from any conditions of overload that, if maintained for a sufficiently long period, would overheat it. Under such conditions, as occur with all multi-phase motors running single-phased, motors stalled, and an attempt made to start them, or motors called upon to drive too heavy a load, the plugs will operate to open the circuit in time to save the motor.

Engineers to Be Represented at Washington

A National Service Committee will be established at Washington by the Engineering Council, 29 West 39th Street, New York. The details of membership and financing have been referred to a Reconstruction Committee composed of J. Parke Channing, chairman; Harold W. Buck, George F. Swain, D. S. Jacobus, Calvert Townley and George J. Foran. A fund of $2,500 has been appropriated for the establishment of a Washington office.

It has been voted to discontinue the War Committee of Technical Societies which has been co-operating with the Army and Navy at Washington.

A study of the Far East market for industrial machinery is planned by the Bureau of Foreign and Domestic Commerce, which has appointed W. H. Rastall, a mechanical engineer who has sold a great variety of machinery in Japan for many years, to undertake this work. Manufacturers are invited by the Bureau to co-operate, and Mr. Rastall will give attention to any specific problems there which are encountered by American manufacturers in their sales work. His temporary headquarters are room 734, Custom House, New York.

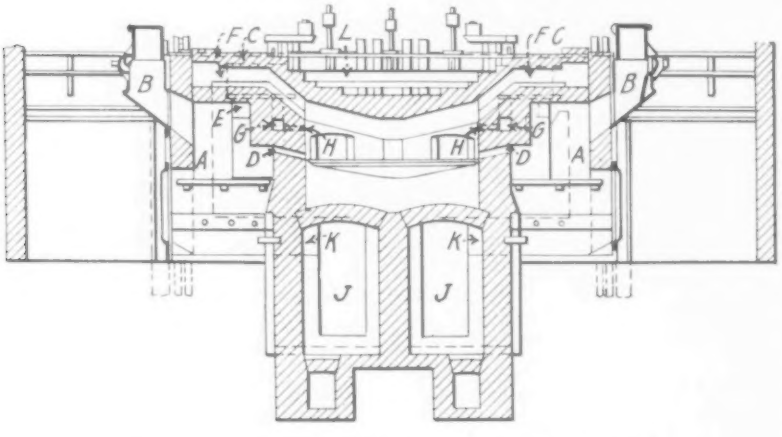
SMALL OPEN-HEARTH FURNACE

A German Design for Making Light Steel or Malleable Castings

A small open-hearth furnace for producing light steel or malleable iron castings, the latter with a carbon content as low as 0.10 per cent, has been designed by Edwin Bosshardt, of Berlin, Germany, according to an article in the London *Iron and Coal Trades Review*. The following details are given, together with a longitudinal section of the furnace:

It comprises two gas producers, A and A, which are fed through the hoppers, B and B, and deliver gas for the furnace through C and C. A special feature of the invention are the slits, D and D, which admit the flames from each producer hearth to the furnace, and ensure a ready ignition of the gas and a high temperature in the furnace. The producer gas itself passes through the flues, E and E, into the containers, F and F, each fitted with a reversing valve, and thence through the flues, G and G, in which it is preheated, through other slits, H and H, into the furnace.

As regards the air supply this is preheated in chambers J and J in the usual way and enters the furnace through the openings, K and K. The two gas generators are connected by a pipe L so that when the gas is reversed, the producer that is cut off delivers its gas through pipe L to the other generator's container F.



Small Open-Hearth Furnace for Small Steel Castings

It is claimed that a temperature as high as 2000 deg. C. can be produced in this furnace and that consequently solid material, like crop ends of rails, old fish-plates, shearings from boiler plates, etc., can be charged into the furnace and readily melted down, and the carbon content of the metal reduced to an unusually low point, producing a metal with an ultimate tensile strength of 22.86 to 26.67 tons per sq. in. with an elongation of 28 to 32 per cent. The distance apart of the pop marks is not stated.

The capacity of the furnace is about 2 metric tons, and a basic lining is used if the usual scrap of engine and shipbuilding works is to be utilized. The melting of the charge takes about 70 min., and the furnace can be tapped after another 50 min. As the metal is brought to a very fluid state, it can be poured quickly, which means no trouble with ferroalloys or waste. It is stated that the furnace can be worked for three months without repairs, when only the heads have to be renewed, which will take from six to eight days. The roof will last out about three pairs of new heads. The fuel consumption of the furnace is stated to be 1 lb. of coal to 1 lb. of scrap, etc., with two charges per day. This rate, however, can be reduced to about ½ lb. of coal per 1 lb. of scrap, etc., wtih four meltings per day.

San Francisco Steel Interests Merged

The Pacific Coast Steel Co., San Francisco, has purchased the West Coast Iron Works, also at San Francisco, for a price said to be in excess of $100,000. The West Coast plant, which includes a 40-ton open-hearth steel furnace, will hereafter be operated in conjunction with the South San Francisco works of the Pacific Coast Company. The purchase will increase the capacity of the Pacific Coast Company by 25,000 tons of steel a year, and makes it the foremost open-hearth steel producer west of Colorado.

For Safety in Refrigerating Plants

A new code dealing with safety in refrigerating plants has been adopted by the Industrial Commission of Wisconsin and is now being distributed as a general order. The code was formulated by a commission consisting of Theodore Vilter, president Vilter Mfg. Co., Milwaukee; J. A. Wieckert, chief engineer Joseph Schlitz Brewing Co., Milwaukee, and M. A. Edgar, boiler inspector Industrial Commission of Wisconsin. The commission explains that the code was adopted because "all refrigerating machines work under very high pressure and some of them emit poisonous gases. There are thus two hazards in connection with their operation: one from flying parts of ruptured machinery, and the other that of suffocation from poisonous gases."

All plants are required to be equipped with the necessary safety devices not later than Feb. 1, 1919, but where especially dangerous conditions exist the right is reserved to require immediate compliance.

Steel Shipbuilding in Australia

The first steel ship to be built in Australian shipyards under the shipbuilding program of the Australian Government was to be launched in November at Williamstown. The whole of the transverse and longitudinal framing of the vessel has been erected. The launching of the second is expected in December. There has been some delay in the construction owing to the shortage of imported steel plates, the deliveries of which are unsatisfactory in point of time. So far 1531 tons of American plates have been delivered at Williamstown, Walsh Island, and Cockatoo Island; another 500 tons are expected soon; a similar shipment is shortly to be made, and the balance of 3500 tons is to be rolled in the next three months if shipping space can be arranged. The Broken Hill Co.'s rolling mill was expected to deliver plates in October. At present 1852 men are employed in the Commonwealth shipyards.

To Manufacture Pipe-Bending Machines

A company, stated to have a capital of $12,000,000, is being organized by Matthew T. Cronin, Bayonne, N. J., and associates, for the manufacture of pipe-bending machines. The company has secured options on about 11 acres of property on Avenue A near Eleventh Street, Bayonne, fronting on Newark Bay, and proposes to commence erection at an early date of a plant to manufacture over 20 models of the machines. Among others interested are Henry P. Bope, former vice-president Carnegie Steel Co., and who will be president of the new company; David E. Tracy, president Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa.; James F. Maneely, John Maneely Pipe Supply Co., Philadelphia, and Filmore Cox, inventor of the machine.

As a result of the reconstruction program of the Dominion Government the Canadian Minister of Railways and Canals will at once proceed with the completion of the Welland Canal. The estimated cost of the work embraced in the four main contracts at the outbreak of the war was $20,000,000, of which $12,000,000 has been expended. Other estimated necessary expenditures for land, cement, structural steel bridges, lock gates, valves, machinery, etc., amount to about $8,000,000, of which about $4,000,000 has been spent.

OUR CONSTRUCTION IN FRANCE

The Enormous Amount of Engineering Work Done by the United States

Discussing the railroad and construction work done by our Army engineers in France, Secretary Baker of the War Department says in his annual report:

"Those operations involved the development of some 26 French ports located from the English Channel to the Mediterranean with such facilities as piers, unloading machinery, warehouses and railroad yards; the repair, expansion and maintenance of the standard gage railroad lines assigned to our use by the French; the construction of narrow-gage lines from the main line rail-heads to points near the trenches, and the provision of cars and locomotives to operate over these railroads to supplement the greatly depleted supply of French rolling stock. The orders placed up to November, 1918, on account of these projects amounted to $700,000,000, a sum five times as great as all the purchases of material, equipment and supplies made for the Panama Canal.

"Of this huge sum, about $400,000,000 is for American-built rolling stock, orders for which had been placed up to Nov. 10, 1918, for 3541 standard gage locomotives, 91,534 standard gage cars, 1294 narrow-gage locomotives and 8623 narrow-gage cars. In addition to the foregoing, 209 locomotives had been purchased for Army use in this country.

"For the construction of the railroad track that we have added to the French system to adapt it to our needs, and for the military and lumbering roads that we have constructed, the General Engineer Depot had ordered up to Nov. 1 sufficient rail to lay 7500 miles of track. Nearly half of this amount has already been shipped abroad and the schedule of shipment in force at the time the armistice was signed called for the monthly shipment of material for about 600 miles of new track. In addition, enough rail for about 1000 miles of narrow-gage track has been shipped for the construction of the 60-centimeter lines close behind the trenches, used for traffic in these sections.

"The cessation of hostilities has, of course, rendered unnecessary the completion of our expeditionary project, and steps have been taken to reduce orders and cancel contracts for such items as will not be needed in France. In this connection, however, care is being taken to assure ourselves that we are not depriving France of material which she so urgently needs to replace that worked out during her terrific self-denials of the past four years. We cannot refuse to render all the assistance possible in the reconstruction of that heroic nation."

The report of the Chief of Engineers of the United States Army for the fiscal year ended June 30, 1918, includes in a list of "more important purchases" made by the Director General of Military Railways, S. M. Felton, former president Chicago Great Western Railway, 1230 standard gage locomotives, 601 60-centimeter gage locomotives, 46 36-in. gage locomotives, 20,095 standard gage cars, consisting of box, tank, flat, refrigerator, gondola and ballast cars; 3382 60-centimeter gage cars, consisting of box, tank, flat, gondola and dump cars; 400 36-in. gage logging cars; 127 locomotive cranes ranging in capacity from 7½ tons to 120 tons, 60 gantry cranes, complete outfits for more than 100 water stations, the entire equipment for a general repair shop, a car-erection shop, also engine houses and hand tools and machinery for locomotive and car repairmen in French shops, and 181,779 tons of 80-lb. rail, which is sufficient rail to lay 1450 miles of single track. He adds: "During the entire fiscal year there have been at all times railroad materials and equipment at the ports awaiting shipment in quantities largely in excess of the ocean tonnage available for its movement overseas. During the winter of 1917-18 production on cars and locomotives on this account had to be slowed down." O. F. S.

The sheet mills of the American Sheet & Tinplate Co. at Farrell, Pa., are now running at capacity for the first time in nine months

Labor Troubles at San Francisco

SAN FRANCISCO, Dec. 3.—The labor situation, especially as it pertains to shipbuilding, Government contracts, and sub-contracts on Government work, is in a chaotic condition. The Macy award, with its retroactive clause, and the appeal from its terms, the no-work Saturday afternoon, or the 44-hr. week propaganda, and the proposition to strike as a protest in the Mooney case, are inextricably entangled in an effort on the part of the workmen to reach unity of action. The various unions are not agreed among themselves on any of these issues, but the firms included in the California Metal Trades Association and the California Foundrymen's Association seem fairly united not to grant any concessions. If the disputes come to a strike it is likely that the employers will stand firm against the demands of the men.

At present there is but one strike of importance in progress. A week ago nearly 4000 members of the Oakland Boilermakers' Union struck at the Alameda plant of the Bethlehem Shipbuilding Corporation to enforce the recognition of the 44-hr. week. The men had not been working Saturday afternoons, but they demanded the formal recognition of 44 hr. as a week's work. The strike did not receive the sanction of the Iron Trades Council, the International Union of Boilermakers, or the American Federation of Labor. As a consequence, R. A. Brotherton, examiner of the wage adjustment board of the United States Shipping Board, says the men cannot receive further consideration from the United States until they return to work. In the meantime the boilermakers in the Oakland yards are taking their Saturday afternoon off and continuing to work, while in San Francisco the men are working the full 48-hr. week.

The boilermakers of the Main Iron Works, San Francisco, struck Nov. 22, when their pay checks were issued without the 10 per cent authorized by the Macy award. The men returned to work in a short time under orders from the Iron Trades Council pending negotiations between the employers and the unions.

The local machinists' union, by a practically unanimous vote, has authorized the Iron Trades Council to call its members on strike to enforce the Macy award with its retroactive clause in all the allied shops, and the Council has referred the matter, together with the proposition of the Metal Trades Association and Foundrymen's Association, to its affiliated unions for a strike vote effective Dec. 8.

Honor to Robert W. Hunt

CHICAGO, Dec. 10.—At a dinner tendered to Robert W. Hunt, of R. W. Hunt & Co., Chicago, at the Blackstone Hotel on the evening of Dec. 9 it was announced that $5,000 had been guaranteed as the nucleus of a fund, the income of which will be used for prizes to be awarded each year, under the supervision of the American Institute of Mining Engineers, for the best papers on iron and steel subjects. The names of the donors were not announced, but the fund will be administered by the American Institute of Mining Engineers and probably will be known as the Robert W. Hunt Fund. The dinner was given by the members of the Hunt organization in honor of Captain Hunt's 80th birthday anniversary. On behalf of the Mining Engineers, he was presented with a handsomely engrossed set of resolutions. In the afternoon, Captain Hunt met a large part of the engineering fraternity of Chicago at a reception to him given at the Mid-Day Club. The gathering was large, despite inclement weather. Captain Hunt is in excellent health.

The Domestic Coke Co., Fairmont, W. Va., has completed arrangements with the Government for the construction of a new coke works. Contract has been let to the H. Koppers Co., Pittsburgh, for the installation of 60 ovens, with planned by-product production of 13½ tons of ammonia sulphate and 450 gal. of toluol per day. The plant will cost about $3,000,000. Frank H. Ginn, Cleveland, is president of the company.

"Moderate" Reduction in Iron and Steel Prices

Manufacturers' Meeting in New York Authorizes the General Committee to Take Such Action at Washington

At a meeting attended by 125 iron and steel manufacturers, held at the Waldorf-Astoria in New York, Monday, Dec. 9, it was decided by practically unanimous vote to make a reduction in prices of iron and steel products. The formal action taken was the reference of the whole matter to the general committee of the American Iron and Steel Institute with power. Since the committee through its chairman, E. H. Gary, had already reported to the meeting that it favored some reduction in the existing official schedules of maximum prices, the action amounted to a committal of the manufacturers present to a new and reduced price basis.

The meeting lasted more than 3½ hours and was devoted to a thorough discussion of the existing situation. Judge Gary emphasized in his address the necessity for maintaining wages and this sentiment was reiterated in the discussion. Judge Gary's argument was that present wages are reasonable and should be maintained unless costs of living are reduced; that in time cost of production would be lowered but not to former levels; that the steel industry should aid in the stabilization of business; that the next five years would be the most progressive, prosperous and successful in the country's history and that while there might be some temporary losses to manufacturers, there should be no danger of serious depression.

The committee which was empowered by the manufacturers to act for them in the conference on prices at Washington on Wednesday, Dec. 11, consists of E. H. Gary, James A. Farrell, E. A. S. Clarke, John A. Topping, E. G. Grace, A. C. Dinkey, Willis L. King, H. G. Dalton, A. F. Huston, L. E. Block, James A. Campbell and J. A. Burden.

Chairman Gary's Address

The General Committee of the American Iron and Steel Institute has been invited to appear before the War Industries Board in Washington on Dec. 11. to consider the question of prices on and after Jan. 1, and perhaps for the discussion of other matters. Following the practice of the last year or more, this representative gathering of the iron and steel industry has been assembled for consultation and instruction. The proposed meeting in Washington may be the last of its kind, as it is rumored the War Industries Board and its sub-committees will soon be relieved and the fixing of prices discontinued. If so, then within a comparatively short time, perhaps sooner than we now suppose, the matters relating to production, deliveries and prices for our commodities will be left to us as individuals or firms or companies; and we will reassume responsibilities varied in character and important in results.

The Committee's Creation

The General Committee was originally appointed by the president of the institute at the request of B. M. Baruch, representing the Secretary of War and the Secretary of the Navy, to mobilize the iron and steel industry of this country for the purpose of concentrating and co-ordinating its efforts in assisting the Government to provide the military necessities of the United States and others.

Several sub-committees were appointed to take immediate charge of different branches of the iron and steel business. You are familiar with their efforts and results. I need not dwell on the work of the general committee or the sub-committees. It has been arduous and often perplexing; but with the unanimous, unwavering and loyal support and effective aid of the entire industry there have been secured results which have been appreciated and praised by Government officials.

Government's Needs in Steel Have Been Met

As you know, the different departments of the Government at first, and later the War Industries Board, with anxious insistence have asked for more and more steel of different kinds and qualities to supply the war necessities of the United States and associate countries, for use here or elsewhere; and with little, if any, delay all demands have been met.

Unlike many other lines of production or service the iron and steel industry has been left entirely in the control and management of its owners, subject only to our voluntary agreement, which referred mainly to the full operation of plants for the production of war material and to priorities of deliveries so far as necessary. Therefore the responsibilities for results have been left to us and we have accepted and satisfactorily disposed of them, as demonstrated by our accomplishments. We have increased capacity, at the cost of millions upon millions, and we have diverted our facilities from ordinary uses whenever and wherever it appeared essential to keep supplies up to the demands made upon us. I do not refer to these things in a spirit of boasting. There is no ground for that. The little we could do was contributed to a great cause in which all of us were vitally concerned. I utter these words to emphasize the further statement to all those present and to their associates in business, that the iron and steel industry has clearly conceived and faithfully performed the obligations resting upon it in consequence of the war.

But our responsibilities as representatives of a great industry are not yet ended and they will be referred to later.

War Industries Board Going Out

As suggested, it now seems probable there will be no occasion again to call a meeting of the iron and steel interests for the consideration of matters to be presented to the War Industries Board, and it is deemed appropriate at this time to refer to that body of men. You know who compose the board and how extensive and important the business in its charge has been. I may be permitted to speak of the experience of the general committee before the board. Some of us have occasionally given expression to feelings of dissatisfaction with the agreements which have been reached relating to price fixing or distribution departments, but I would be less than sincere if I failed to state that all in all, from the time of our first appearance before the

board to the last, its members have exhibited great ability, careful study and deliberation, unusual patience, and above all, a disposition to be fair and considerate. In view of the variety and complexity of the questions presented to them by us and hundreds of others, the wonder is that an organization was formed which could so smoothly and efficiently comprehend and dispose of the stupendous and important transactions which, from necessity, were forced upon this board. The difficulty of reaching conclusions which would at the same time fully protect each and all of the different classes of our industry was apparent.

The problem of the board was to secure the largest possible production of steel required for military necessities by the fixing of prices which would permit the operation, with some profit, of the plants having the highest costs, and at the same time to fix prices and make adjustments which would prevent the low cost works from receiving unreasonably large earnings. From beginning to end, the board has been just and reasonable toward us and to the Government as well. After an experience of many months, which has given us a clear understanding of the reasons and motives which prompted the Board to act and the President of the United States to approve, I think, all of us are satisfied we have no valid reason for complaint.

[After tracing in summary the Allied achievements in the war and the problems which peace has brought, the speaker continued:]

Present Action of Steel Producers

The discussion and references thus far lead us to a consideration of the attitude we are to assume and the part we are to take in the business matters under our charge or influence at this time. How shall we conduct our affairs? What, if anything, shall we recommend to the War Industries Board next Wednesday concerning maximum prices? And what of the future? Can and will the management of our industry exercise any stabilizing and beneficial influence upon the economic interests of the country?

Necessarily we must consider of paramount importance the labor situation. During the war the wage rates have been increased materially and frequently. They are now much higher than ever before so far as I am informed; it is claimed in some respects they are out of proportion. For one, I believe we have not been paying more than was proper and just. The necessary costs of living have been growing and unless and until they are reduced it would seem that, on the average, the present wages are reasonable.

Employers Must Make First Sacrifices

It is urged that on the basis of the present scale of wages the employers cannot afford to make reductions in the prices of their commodities, and many insist they are entitled to higher rates. As we, in this country at least, are operating and living on a basis of general prices that are abnormal, we might consider the propriety of making reductions at the same time in every direction; but this would be impracticable. Therefore, if there are to be reductions they must be gradual and considered in individual cases. We must commence at some point or place. Judging from the past, all of us believe we should not commence to make reductions at the point of wage rates; sacrifices must previously be made by employers. Our employees must continue to be treated liberally with respect to their compensation and general welfare. We will continue to show to them that it is our intention to consider their merits, and to treat them as associates and valuable assistants in our work. We should give no cause for reasonable complaint or unfavorable criticism.

There is no ground for believing, as sometimes hinted, that the workmen of this country are desirous of controlling the methods of production or distribution. They know they could not be successful in the experiment. They understand as well as we that all lines of human activity must succeed or fail together; that every individual must consider and recognize the rights of all others if we are to have prosperity, comfort and happiness; that he who agitates for anything else is disloyal to his country, his friends and his home; that the average leader who tries to disturb the friendly relations between neighbors or associates is acting from selfish motives; for pecuniary profit or individual power or position.

Employers Are Workmen

If the workmen generally are treated fairly and liberally they will stand and contend for fair treatment of the employer. I refer now to the wage earners. But who are workmen? You and I, as well as the man who works by the day. Most of us, if not every one of us, started on the farms or in the shops or mills, for very low compensation, and we are proud of it. We are still workmen, with long hours and arduous tasks. No man wishes to remain at the bottom of any ladder. All wish to climb and to prosper. All desire to occupy positions of independence and they want to secure this by hard work. Let us use our influence in assisting our employees to progress and succeed. Let us retain their confidence and loyal support by our action. They will meet us half way if they are permitted to exercise their own judgment and spirit of fairness. Conditions now are good and you who are listening to me have been a potential factor in bringing this about.

Prices Have Been High

I am assuming you will not favor reductions in the wage rates unless and until it shall become absolutely necessary, notwithstanding it is possible the War Industries Board may decide there ought to be conservative reductions in the prices of our commodities after Jan. 1. Our prices have been high during the last year, and in the cases of a few companies the profits have been large. In order to maintain production up to full capacity of all manufacturing works, so as to meet the military necessities of this country and its associates in the war, it has been necessary to fix prices larger than normal, because of increasing costs of production, by reason of wage increases and higher prices for everything the producer has been obliged to buy or pay for.

However, the war is ended and producing and selling conditions are changing. Furnaces and mills will be returned to ante-war uses and methods. The law of supply and demand will again control. There will soon be no restrictions in prices nor anything to prevent their settling down to a lower basis, depending upon circumstances. Costs of production probably will, in the course of time, be decreased, though not to former levels. It is to be hoped no seller of our products will feel inclined to make prices too high simply because he may be able to secure them, nor to make them too low simply because there is need of ready cash.

Everything depends upon the individual producer. If we are fair and reasonable toward our employees, our customers, our competitors and those who own our properties, we shall not become demoralized or foolish and we will be entitled to the approval of all other lines of business and to the people generally. No one in the long run is benefited by unreasonably high or low prices. This has been tested over and over again. The general public, as in 1907, expects the steel industry, called the barometer of trade, to exercise moderation and skill, and, so far as legitimate and right to lend its efforts in aiding the stabilization of business. For our past attitude we have been commended. In the future we may expect to receive our just deserts.

War Industries Board May Counsel

If the War Industries Board shall fix prices, or if its members shall counsel us as to the future in accordance with the opinions I have expressed, it is to be hoped we will not dissent or fail to adopt.

I have intimated that values or prices generally throughout this country are abnormal and unreasonable. We ought to get back to a peace basis so soon and as speedily as possible. It should be accomplished in an orderly and methodical manner and with the least disturbance to general business and without injustice to

any. This is peculiarly a time for constructive thought and action; for cool heads, for courage, for the exercise of a spirit of fairness; even for sacrifice when necessary.

Should Be No Depression

There should be no danger in this country of serious business depression. We are so rich and prosperous and our resources are so large that the indulgence of feelings of fear or doubt as to our financial, commercial or industrial safety and progress would be wholly unjustified. Our prospects are bright, our opportunities for success are greater than ever before. Even if there should be some decreases in volume we may look forward with confidence. I predict the next five years, in this country, will be the most progressive, prosperous and successful of our history; the results will astonish even the most optimistic of to-day. We need to be conservative, thoughtful, persistent, fair-minded and wise up to the limit of our understanding.

Price Reductions Recommended

And now, gentlemen, I am going to surprise and perhaps disappoint some of you, and no doubt you will have justification on account of your own business situations; but I beg of you do not hastily reach a final conclusion in regard to the suggestion that is to be made.

After a painstaking and exhaustive consideration and discussion, covering the larger part of two days, the General Committee, or at least a majority of its members, perhaps all of them, have reached the conclusion that at the meeting to be held in Washington next Wednesday there should be recommended to the War Industries Board a moderate reduction in the scale of maximum prices for our commodities, commencing Jan. 1, the reductions and adjustments to be made on an equitable basis, in consideration of all the circumstances, and after careful study. If all present would agree to reductions and are prepared to systematically make a new schedule, it should be done at this meeting; but I think that all interests would be subserved if these matters, as heretofore, are referred with power by this meeting to the general committee, for submission and consultation with the War Industries Board. The proposed schedule would be completed prior to the meeting in Washington, though its preparation necessarily involves much study and labor.

Moderate Reduction Might Save a Greater

I presume many of you, at first blush, taking into account your costs of production, will present arguments against the adoption of the proposal. Still, I hope you will give due consideration to the thoughts which have been expressed by your chairman.

You have a chance to do something valuable toward sustaining the business equilibrium of the country. While some might suffer losses at present, perhaps it would prevent greater losses in the future. We would be leaders in a movement calculated to methodically readjust conditions in an orderly way. We might have some influence in steadying business generally. And remember the workmen are more interested in this question than any others, for labor constitutes the greater part of the cost of production from the raw material down to the finished product and its use by the consumer.

It seems to me the unanimous consent of the members of the iron and steel industry to a recommendation to the War Industries Board for a reduction in prices is called for, especially after a long period of united effort, on the invitation of the War Industries Board, to agree upon prices.

Approaching a Better Basis

If reductions are made now and manufacturers accept them willingly, even though sacrifices have to be made, we may be consoled by the fact that we are approaching better times, lower costs, a more natural and substantial basis, and that we are probably doing the right thing. I feel reasonably confident the iron and steel men will, as heretofore, especially during the war, be willing to do their part in promoting the welfare of all who are interested. Those who buy our products will correspondingly reduce their prices and thus do their part in the direction mentioned, and so on down the line; it may extend to others.

The iron and steel men have been broadminded, liberal and big in every way, and I appeal to you at this time with confidence.

The Ford River Rouge Operations

A force of 5000 men is rushing to completion, day and night, the Ford plants on the River Rouge, Detroit, which will be the center of an enterprise which will eventually absorb $50,000,000. Already $10,000,000 has been expended on the work. Within two months the coke oven and by-product plant will be producing 12,000,000 ft. of gas daily.

The first of the two blast furnaces is nearing completion, and the foundation for the second has been laid. The three hot-blast stoves of No. 1 furnace are up. The furnaces will each have a daily capacity of 600 tons. A foundry 264 x 968 ft. will be constructed near the furnaces. Two Hulette boat unloaders and ore and conveying bridges have been completed.

A power plant to cost $2,500,000, and equipped with 12,000 and 20,000-kw. turbine generators, and a steam-driven reciprocating engine, will be constructed in the spring, as will the pig-iron storage building, in which the surplus production from the furnaces will be stored for the market.

It is planned to have the entire works in operation by the fall of 1919, when between 5000 and 10,000 men will be given employment. Ore will be transferred from Lake Superior mines to the furnaces in boats built at the Ford Eagle plant. From the River Rouge works the rough parts for Ford automobiles, tractors and trucks will be shipped to the various assembling plants. The East will be reached by the Erie Canal, and boats constructed in the Eagle plant will do the transferring.

Decrease in Lake Ore Shipments

Shipments of iron ore down the Lakes from the Lake Superior region in November were 4,285,861 gross tons, compared with 7,333,828 tons in November, 1917, a decrease of 3,047,967 tons. The following table gives the November and season shipments by ports and the corresponding figures for 1917 in gross tons:

	November, 1918	November, 1917	To Dec. 1, 1918	To Dec. 1, 1917
Escanaba	722,658	838,096	6,774,969	7,156,454
Marquette	206,847	327,113	3,457,054	3,267,145
Ashland	631,237	900,241	7,565,608	7,597,887
Superior	1,004,140	1,516,162	14,068,341	13,978,741
Duluth	1,285,496	2,583,620	20,567,288	20,567,412
Two Harbors	435,483	1,168,596	8,723,472	9,999,907
Key Harbor, Ontario	.....	.....	.....	155,823
Total	4,285,861	7,333,828	61,156,732	62,653,729
1918 decrease	3,047,967	.....	1,497,994	.....

For the season to Dec. 1 the decrease for 1918 is 1,497,994 tons, as against an increase for the same period a year ago of 2,060,872 tons. The shipments of 7,333,828 tons in November, 1917, were the largest for any November on record.

The Vocational High School, Syracuse, N. Y., has arranged a series of special courses of industrial instruction as a part of the evening school program during the coming season. The courses will include pattern-making, machine-shop work and elementary and advanced mechanical drawing. James M. Scott is supervisor of industrial education.

REDUCING LABOR TURNOVER

That of Ford Motor Co. Lowered from 370 Per Cent to 16 Per Cent in Two Years

The manner in which the Ford Motor Co., Detroit, reduced its labor turnover from 370 per cent to 16 per cent in two years is outlined in a statement issued by the educational department of the company.

In 1913, prior to the inauguration of the Ford profit-sharing plan, the labor turnover was 370.28 per cent. In 1914 the turnover was reduced to 53.71 per cent by the introduction of the plan. The decrease would have been much greater except for the industrial depression which caused the lay-off of 3000 single men at one time. In 1915 the turnover was further reduced to 16.02 per cent. In 1916 war conditions caused a slight increase to 24.34 per cent. Complication of these conditions caused further increase to 42.31 per cent in 1917, where it practically remains to-day. Thus to-day, in a time of abnormal conditions, the Ford labor turnover is about one-ninth of what it was in 1913, a normal and prosperous year.

So successful has been the result of the profit-sharing and minimum-wage plan that the Ford Motor Co. is urging all employers to adopt a similar policy.

Removing Causes of Dissatisfaction.

In its statement on labor turnover the educational department of the Ford Motor Co. says:

"Human troubles in industries are due to human conditions, and the Ford Motor Co. satisfied itself on this point in 1913, when it made an investigation to ascertain the cause of the turnover in its labor force. The chief causes for dissatisfaction and unrest among employees, it came to the conclusion, were these:

1. Too long hours. A man whose day is too long and whose work is exhausting will naturally be looking for another job.
2. Low wages. A man who feels that he is being underpaid will always be looking for a change of occupation.
3. Bad housing conditions, wrong home influences, domestic trouble, etc.
4. Unsanitary and otherwise undesirable shop conditions.
5. Last and perhaps the most important cause of dissatisfaction is the unintelligent handling of men on the part of foremen and superintendents.

"These things being the chief causes for labor turnover in the opinion of the company, it decided, so far as possible, to remove the causes. It shortened the hours of labor; it increased the wage, especially of the unskilled class of labor; it created a special department to look after the homes and home conditions of its employees and to re-establish, as far as possible, the lost personal relationship between employer and employee; it did everything it could to make more favorable the conditions under which men were working in the shop; and last, a matter worthy of special attention, it took from foremen and superintendents the power to hire and fire.

"This is in brief what the Ford Motor Co. did, and the result has been a reduction in the turnover from 300 to 400 per cent to about 18 per cent, an increase in the efficiency on the part of its employees, and also a co-operation from them which was not given under the old order.

The Housing of Workmen.

"We do not build houses for employees. We have never felt it necessary to go into this kind of work. The fact is, we believe it is better that a company should not stand in the relationship of landlord to its employees. What we have done has been to help employees who have been living under bad conditions to get out of these conditions into better homes and better neighborhoods. The wage paid by the company has made it possible for men to buy homes or to build them.

"To sum it all up, a man is likely to stay with a company when he is working a reasonable number of hours for a wage that enables him to take good care of his family and to provide for his future, and whose job does not depend upon the good will of a foreman or superintendent, and who knows in case of trouble that his case may be taken up with the highest authority and every effort will be made to give him a square deal."

How Rate of Production Has Increased.

Nor has the reduction of turnover been the only result of the profit-sharing and minimum-wage plan. As an example of increased production, an official of the company cites the fact that, previous to the introduction of the new plan, gangs of 65 men were producing 750 automobile radiators a day. After the plan was adopted reorganized gangs of 60 men were producing 1250 radiators a day. Previous to the inauguration of the policy 16,000 men were producing 16,000 cars a month, while immediately after it 14,000 men were producing 28,000 cars a month.

Recently the Ford Motor Co. adopted a minimum wage plan for women. At present the company is considering the raising of the minimum wage for men. It is anticipating the building of 1,500,000 automobiles a year within two years. To do this it intends to increase the satisfaction of the workmen and through them get greater results without materially increasing its force.

Employment of Injured Workmen.

A novel plan to increase the satisfaction of injured workmen has recently been adopted. Formerly men who were disabled were paid a compensation wage of $18 or $20 a week. The new plan provides for the occupation of these men while they are in bed at regular daily wages. It has been found that 80 per cent of the injured suffer from accidents to the feet and legs, allowing them to use their hands. To them each day is carried intricate work which occupies their time during the day. This plan, according to an official of the company, results in more rapid recovery due to the taking of injured men's minds off their misfortunes, and also results in greater satisfaction with the company's policy.

Following Henry Ford's idea that no person should be given money as charity, the company is now employing many disabled men. Eighteen per cent of its employees are physically disabled. It can find in its shops work for every class of physical disability except cases of loss of both arms. A recent survey shows that the plant will care for 4062 crippled soldiers on their return.

Canadian Munitions Board Stops Operations

Manufacturing operations for the Imperial Munitions Board, Ottawa, on United States account were stopped Dec. 7. Work will stop on British contracts Dec. 14. Various companies belonging to the Imperial Munitions Board will be liquidated at once. Their capital stock has been wiped off by profits of operations, and the board is seeking to sell the properties to be used for industrial purposes. The properties owned by the board consist of the British Chemical Co., Trenton, Ont.; another chemical plant at Noble, Ont.; a fuse company at Verdun, Que., and two plants at Toronto, consisting of the British Forgings and the Canadian Aeroplanes, Ltd. It is estimated that these stoppages will cut off about $100,000,000 of orders actually given out and about $200,000,000 more in contemplation when the armistice was signed.

The Unity of American Engineering

A special meeting of the Cleveland section of the American Society of Mechanical Engineers was held Nov. 29 to discuss and recommend plans for bringing together the various branches of engineering. L. Robert Yarnall, Philadelphia, chairman of the section committee of the A. S. M. E., talked on the plans of his committee. The purpose of the organization of the American Engineering Society was discussed by E. S. Carman and E. B. Thomas of the Cleveland section. The meeting unanimously indorsed this plan and also the aims and objects of the organization as presented by James H. Herron. Delegates were instructed to present this plan at the annual meeting of the A. S. M. E. in New York this week. These delegates are E. S. Carman, chairman of the section, and James H. Herron, secretary.

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Price Readjustments

At a largely attended meeting of iron and steel manufacturers in New York, Dec. 9, action was taken in favor of a "moderate" reduction of prices. All but a relatively small part of the steel output of the country was represented. The action taken was in the form of a resolution empowering the general committee of the American Iron and Steel Institute to make such reductions as it might decide to recommend at its conference with the War Industries Board in Washington, Dec. 11. It was the understanding at the meeting that the War Industries Board had practically ceased to function in the fixing of prices and that the prices resulting from the conference at Washington would rather represent the opinions of the majority of the steel manufacturers than as heretofore the result of an agreement between representatives of the steel industry and of the Government.

The opinion that a reduction in prices should be made at this time had not been shared by all the leaders in the trade. However, it is announced that the vote taken at the meeting of Monday was unanimous, some who had taken a different view being willing to accept the decision of the majority. It is understood that no change is contemplated in the price of ore, as practically all ore that will be consumed before the opening of navigation in 1919 has been bought. Coke prices are not involved, and in any event many coke contracts have been made covering the first half of next year. It is not intended that existing contracts for pig iron and finished material should be affected by the reduced prices expected to go into effect Jan. 1. Many pig iron producers have firm contracts on their books which they are not disposed to revise, seeing that when the war advance came on they had low-priced orders on their books, which they filled at the original contract prices.

At this writing the new prices have not been announced, but there is an expectation that pig iron will be reduced $3 a ton, some heavier forms of finished material $5 a ton, and some lighter forms probably $10 a ton. The meeting of Monday was unanimous in the expression that wages should not be touched; that manufacturers should first sacrifice some of their war profits, if necessary, and that wage reductions should not come in any event until there has been reductions in the cost of living.

The movement initiated on Dec. 9 has some things in common with the Gary dinner movement of 1907 and represents the desire of the steel industry to conserve the situation and to bring about an orderly readjustment in prices. The argument as presented from the viewpoint of some of the leading interests is that war prices are not justified in time of peace. As against this is the contention of some of the smaller producers that prices now existing are as low as can be made until there is a readjustment of costs. A number of producers have raw materials bought at high prices and in some cases losses on product manufactured from such materials will be considerable, even at a moderate reduction for finished products.

Comment on the new movement can be more intelligently made when the auspices under which the proposed prices are promulgated from Washington and the sanctions given them by Wednesday's conference are fully known. To those in the trade who have argued that price readjustment might well have been postponed, it is to be said that in some directions evidences of readjustment have already appeared. Labor, which it has been declared on every hand should be last to be touched, has already been affected. The high wage rate remains, it is true, but the wage earner's income has already suffered from reductions in time and the abolition of overtime. Thus the country's purchasing power is already less than it was on Nov. 11, with indications that it will be reduced still further in the coming months. Reduced purchasing power means in time and inevitably lower prices for commodities.

The Atlantic City Conference

The very large attendance of business men at the reconstruction conference in Atlantic City last week indicated the intense interest that is felt in the solution of problems growing out of the war; and although it was gratifying to see this response to the call for the meeting, the large number present and the complex program of meetings of committees made it difficult to crystallize the sentiment and obtain practical results. Hence the greatest value of the meeting was in the exchange of views in the formal speeches, some of which were of very high order, and in the meeting of men in an informal way, rather than in the many resolutions adopted.

The decision to send a delegation of business men to offer its services to the peace conference at Versailles is of doubtful wisdom, following as it did the expression of President Wilson that the assistance of business men was not necessary. The commission will be in somewhat the same position as members of the United States Senate would have been if they had been sent to France in accordance with the plan of Senator Cummins, which was promptly rejected by the Senate committee.

The discussion of committees on iron and steel production as to the price fixing policy of the Government was interesting as showing the feeling of some manufacturers and jobbers that the help of the Government is still needed in stabilizing conditions. The action of the major steel group in voting down the resolution favoring the termination of the price fixing policy Jan. 1, was not an expression of manufacturers of iron and steel, of whom very few were present, but of buyers, some of whom had considerable stocks on hand and felt that even if the Government did nothing more than continue its maximum prices for iron and steel products, that would be more desirable than to abandon price control entirely. The extent to which buyers look upon the maximum price as a minimum and speak of the Government maximum price as if it were the only price possible is surprising.

One very noticeable and highly gratifying feature of the conference was the attitude of employers to labor questions. The able discussion by John D. Rockefeller, Jr., was one of the most important features of the week and the adoption of his industrial creed is a most impressive manifestation of the determination of employers to do their full part in bringing about amicable relations between capital and labor.

The effort to keep up to a certain extent the war service organization by forming a council to be composed of the chairmen of the war service committees of various industries should result in the Chamber of Commerce of the United States becoming a still more important factor in the business life of the nation, for the new council is to be advisory to the War Service Executive Committee of the chamber.

Railroads and Steel

The President played a trump card, as he frequently does, when he formally laid before Congress the task of deciding what shall be done with the railroads. Congress had been expressing a desire for more work to do, and circumstances were such that even if the President had made recommendations appealing to a majority in the country, the minority would probably have criticized more than the majority would have commended.

To the steel industry the situation is an unfortunate one with respect to the nearby future. During the period of debate the railroads will be practically without a purchasing agent, or at least without directing heads to determine what purchases should be made. The Railroad Administration cannot possibly act in a broad gage manner when it does not know whether it will be responsible for railroad operating results for any length of time, and the individual railroad owners cannot act when they do not know whether they will ever get their properties back. The railroads have always been the best single customer of the steel industry and the present would be a particularly good time for the filling of railroad orders. Business is in a transitional period, during which capital will seek to determine the most profitable lines in which it can invest, and for these decisions time and study are necessary. In whatever directions American business may decide to devote its energies chiefly, transportation will be necessary; therefore transportation facilities constitute one thing which it is safe to plan at once to provide.

The steel industry would like to know how much steel the railroads of the United States will purchase in future. That there will be relatively little bought in the next few months is made apparent by the situation existing, for whatever the purchases are to be they will be made after rather than before it is decided what to do with the railroads. The conception, however, that railroad requirements are more or less a fixed quantity in the long run, and that purchases can merely vary from one year to another, is not correct. There is no fixed amount of transportation, in other words, that the country requires. For instance, the less railroad service is available the more motor trucking there will be. The more time and money involved in moving foodstuffs long distances the less movement there will be. Foodstuffs will tend to be consumed nearer the point of production. The output of California fruit will be less than if the fruit could be moved expeditiously and cheaply to Eastern markets. The amount of mining, agricultural and other development depends upon the transportation facilities available, and thus there is no fixed and definite amount of transportation the country needs.

In large measure, therefore, the question of rail transportation becomes one of national policy towards commerce. The present problem is not simply to determine the best method of bringing it about that in future, year after year, a certain quantity of transportation shall be afforded. The larger problem is to determine what that quantity of transportation shall be. In the development of the present railroad system part of the capital expenditure has been for the development of additional business and part of it has been for competition. It is now agreed that in future there is to be no competitive building, that whatever increase in facilities occurs is to be against new and additional traffic. It should be a matter of national policy to decide to what extent railroad facilities are to be expanded for the general good of the country. Upon the breadth or narrowness of that policy depends the amount of railroad steel that will be required in the future.

In another respect the Government can render a great service to the country. In the past railroad purchases have been made largely at the wrong time. Nothing has been of more certain

and steady growth in the United States than the volume of freight and passenger traffic. It would be much cheaper to increase facilities steadily year by year, or even to increase them most when labor and materials are low in price, than to do what the railroads have done, buy labor and materials when they are costly and stay out of the market when they can be had cheaply. Railroad expenditures have been timed by the money market instead of by the labor and commodity market. The new plan for the railroads should provide for developments being pushed when the work can be done most cheaply, thus saving money and at the same time reducing the fluctuations in the degree of the country's industrial prosperity. For the steel industry this reform would be of great benefit.

By-Product Coke Capacity

The Geological Survey's rating of the capacity of the by-product coking industry has now reached 650,000 net tons a week. It should be noted that these weekly ratings are based upon the coal available at the individual plants. If transportation conditions require that a by-product plant be supplied with coal that is not its first choice, the plant's tonnage rating is based upon that particular coal. Some of the ovens in future will secure better coal, and their ratings will increase somewhat. Operations lately have been at materially less than 90 per cent of capacity, but it is probable that a higher percentage will be attainable in future, and it is fair to estimate that the existing by-product ovens can be counted on for 600,000 tons of coke a week under favorable conditions, or 31,000,000 tons a year.

In 1916, when a total of 54,533,585 tons of coke was produced, the production of pig iron was 39,434,797 tons and the coke consumed was 44,431,905 tons, or 91 per cent of the total. Of late, on account of various conditions occasioned by the war, the consumption of coke per ton of pig iron has been above normal, but a return to normal conditions is to be expected. A system is being established in the Connellsville region whereby inspectors responsible to the furnace interests will determine whether coke offered is acceptable. At by-product ovens better coke will be made as more latitude in choice of coal becomes feasible. An outside estimate of the country's pig iron capacity is 44,000,000 tons, as familiar methods of computation would rather indicate about 43,000,000 tons. At 44,000,000 tons, according to the 1916 standard of consumption there would be required 49,500,000 tons of coke, and allowing for other consumption according to the 1916 standard the total coke needed by the country would be 61,000,000 tons. Deducting 31,000,000 tons for by-product coke, would leave 30,000,000 tons as the maximum required from the beehive ovens, or 580,000 tons a week. Beehive coke production in the past two weeks reported upon has been only 522,000 tons a week, but last spring, in the 11 weeks from March 11 to May 25 inclusive, the production reported averaged 656,000 tons a week. Thus there is a surplus of beehive coking capacity of 75,000 tons a week plus whatever idle capacity there was last spring.

In very large measure the surplus will prove to be of oven capacity only, and not of coal producing capacity. The coal that has hitherto been coked in beehive ovens will in future go to by-product ovens. This is particularly the case with Connellsville coal, and the situation already exists very clearly in that region, seeing that with all the curtailment there has been in Connellsville coke production the amount of coke plus the amount of coal shipped is greater than the coal production in the palmiest days of the region when it was practically nothing but a coke producer.

Marketwise, the situation promises a price for beehive coke based on the market value of the coal consumed plus the actual cost of converting the coal into coke at beehive ovens. With a large surplus of oven capacity there can hardly be a profit in the coking operation, but the profit in the coal itself is assured. With a much lower net cost of conversion, counting the value of by-products, the by-product ovens will naturally run full at the expense of beehive operations, but at the same time buying much of the coal that under former conditions was consumed at the beehive ovens.

Labor Conditions at Bethlehem

The National War Labor Board has given out correspondence between E. G. Grace, president Bethlehem Steel Co., and Chairmen William H. Taft and Basil M. Manly of the board in regard to labor conditions at the Bethlehem plant. Mr. Grace, under date of Nov. 27, wrote stating that in view of the problems which confront the company at Bethlehem, where the force is four times as large as at the outbreak of the European war, he wished to suggest the desirability of withdrawing the examiners which the board had at the plant, thus permitting the company to proceed to make the necessary adjustments and rearrangements of its working forces to meet the new peace-time competitive conditions and to enable the company to proceed with the installation of the "practical, comprehensive and permanent plan of employee representation, providing for collective bargaining," which is now in successful operation at its other plants.

The National War Labor Board, under date of Dec. 6, wrote to Mr. Grace, stating that in its opinion his letter amounted to a refusal to apply the findings of the board or to respect its authority on the ground that hostilities had ceased. Messrs. Taft and Manly declared that the question was one of good faith of the company and the Government and that they must insist that the machinery of collective bargaining already established be maintained and permitted to function and that other findings of the board be carried out fully and promptly.

Very rich finds of iron ore have been made in the Verbeck Hills at Celebes, Dutch East Indies, states the *Engineer*, London. At first it was estimated that the beds contained about 350,000,000 tons iron ore, but now it is stated that there are at least 1,000,000,000 tons Laterite iron ore. Outcroppings showing 25 per cent nickel have also been found over an area of from 300 to 400 kiloms. They are most favorably situated, both for working and for transport purposes. The ores lie at a depth of from 14 to 15 m. Iron ores, chrome iron ores, nickel and manganese are also found in this district.

A CANCELLATION PROGRAM

Machine-Tool Builders and War Department Officials Discuss Contract Adjustment

A joint meeting of the National Machine Tool Builders' Association and the Supply and Machinery Dealers' Association was held with representatives of the War Department Tuesday afternoon, Dec. 10, at the Hotel Astor, New York, following the morning opening sessions of the two organizations. The principal address was made by Major-General C. C. Jamison, head of the Salvage Board of the War Department, in which he put forward a plan, which was adopted, whereby the entire problem of adjusting war contracts is to be worked out by a joint committee of his staff, together with representatives of the Machine Tool Builders' Association. While no details of the probable procedure were fixed on the underlying sentiment was to prevent a flooding of the market with the great quantities of machines which the Government must eventually dispose of. The first session of the committee and Government representatives was held Wednesday.

Opening Session of the Machine Tool Builders' Association

The vital need of close co-operation with the Government in solving the many problems involved in readjusting manufacturing and marketing was emphasized by F. C. Schwedtmann, vice-president National City Bank of New York. He urged a much closer organization of all American manufacturers, pointing out that to-day manufacturers in England and some other European countries were better off in this respect than in America. The early development of a national program for the development of water power, free ports and better harbors, he stated, would help wonderfully to carry industry over the present crisis. While he recommended close contact with Government officials, he held that the Government's only interest is to help not to control.

The upbuilding of export machine-tool trade depended largely, as he saw it, upon the careful selection of foreign sales agents, banking connections, and even the education of the individual foreign machinist who handles the tool. For the fullest development of the machine-tool industry, he stated that the accomplishment of turning out the very best of machine tools must be reinforced by a campaign to educate the youth, engineers, manufacturers and even bankers of America in the importance and value of the machine tool.

The export situation was analyzed by James W. Hook, president Allied Machinery Co. of America, who declared that it will take years for foreign manufacturers to catch up with American production methods. The weakness of manufacturers abroad lay, he felt, in the prevalence of the one-line plant.

The advantageous position that American commerce possesses in its new merchant marine and the great credits of the United States abroad, must be backed, he said, up with a liberal extension of credits, an increase in transportation, care in packing and crating tools, familiarization with rules governing export, and the establishment of dollar exchange. Protective measures are essential to debtor nations, and he pointed out that the free foreign markets of before the war will probably disappear.

A letter was read from the War Trade Board saying that it is working to remove remaining restrictions and that all applications for export are now issued freely except to some countries contiguous to enemy countries.

Supply and Machinery Dealers' Association Meeting

The opening meeting of the Machinery and Supply Dealers' Association, Tuesday morning, Dec. 10, was devoted to a discussion as to how the dealer may adequately protect himself in cases of cancellation, and to the prospects in machine-tool distribution for next year.

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Less Steel Ingot Output in November

Steel ingot production in November, according to statistics compiled by the American Iron and Steel Institute from reports submitted by 29 companies which made about 85.10 per cent of the steel ingots produced in 1917, was at the rate of 44,446,560 gross tons, a decrease of 8.7 per cent from the estimate of 48,687,594 gross tons based on revised figures for September. Twenty-five working days are allowed for November, but production was also somewhat interrupted by the two days practically devoted to peace celebrations. The table below gives the ingot production of these 29 companies for the past 16 months:

Monthly Production of Steel Ingots—Gross Tons

	Open-Hearth	Bessemer	All Other	Total
August, 1917	2,251,013	863,873	8,331	3,123,217
September	2,195,556	770,064	6,639	2,972,259
October	2,475,754	870,494	5,687	3,351,935
November	2,384,218	772,489	9,550	3,166,257
December	2,195,832	524,084	13,806	2,733,722
January, 1918	1,763,356	429,588	10,901	2,203,845
February	1,805,233	454,457	14,051	2,273,741
March	2,331,048	763,255	16,078	3,110,381
April	2,377,974	769,249	16,187	3,163,410
May	2,475,131	796,244	15,858	3,287,233
June	2,281,718	786,380	15,348	3,083,446
July	2,311,545	784,997	17,093	3,113,635
August	2,229,177	766,860	17,643	3,083,680
September	2,407,993	772,863	16,802	3,197,658
October	*2,527,776	807,043	17,377	*3,352,196
November	2,217,639	826,893	15,631	3,060,154

*Revised.

Youngstown Sheet Employee Representation

Employees of Youngstown Sheet & Tube Co. Are Given Representation on Matters of Special Interest to Them and of General Concern to the Company

The Youngstown Sheet & Tube Co., Youngstown, Ohio, has adopted a plan for representation of its employees "in order to provide effective communication and means of contact between the management and the men on matters pertaining to industrial relations and to insure justice, maintain tranquility and promote the common welfare." This plan is similar in general to that adopted by several other iron and steel companies, but has some special features. It is limited to those who are not company officials, salaried employees or persons having the power to hire or discharge, representation of whose interests is to be provided for otherwise by the company.

Seventeen divisions of the company's operations are set forth in the plan for the purpose of fixing units of representation, from each of which one representative from their own ranks is to be chosen for each 300 employees, any division having less than 300 to be entitled to one representative. The representatives are to be elected annually in December, those chosen at the first election to serve until Jan. 1, 1920, and all representatives to be eligible for re-election. To be entitled to vote for such representatives employees must have their names on the payrolls for at least 60 days prior to the date of nominations and be 18 years of age or over. Before entering upon their duties each representative must take an oath of office before some State officer. The manner of conducting such elections is set forth in minute detail so as to insure orderly procedure and to safeguard the rights of all employees. Among other important provisions of the plan are the following:

The Management's Representative

The company shall appoint a management's representative to facilitate close relationships between the management and the employees' representatives. The management's representative shall keep the management in touch with the representatives, their officers and committees. He shall respond promptly to any request from representatives, and shall interview all of the representatives from time to time, but not less frequently than once every month, with reference to matters of concern to employees, and report the result of such interviews to the management.

Committees

1. On the first Monday of January immediately following their election, the representatives shall meet and elect from among their own number a Chairman, a Secretary, a General Committee, and a Committee on Rules, and may then, or from time to time thereafter, appoint such other committees as they may deem necessary to consider any of the following subjects:

Wages, Employment, and Working Conditions
Housing, Domestic Economics, and Living Conditions
Safety and Prevention of Accidents, Sanitation and Health
Transportation (Employees)
Works Practice, Methods, and Economies
Education and Publication
Recreation, Athletics, and Entertainment
Continuous Work and Reconstruction Problems.

2. The Committee on Rules shall have jurisdiction to consider matters relating to rules, procedure, and elections.

3. The several committees shall have jurisdiction to consider the subjects indicated by their respective titles and such other matters and things as may from time to time be referred to them by the General Committee.

4. The General Committee shall have jurisdiction to consider all matters not falling within the scope of any other committee constituted and acting hereunder, and shall when jointly composed act as a committee on appeals.

5. Each committee shall be composed of five members, two of whom in the case of the General Committee shall be the Chairman and Secretary of the representatives. Each of the other committees shall appoint its own chairman and secretary. Except upon approval of the Joint General Committee, no representative shall serve on more than one committee.

6. Vacancies on committees shall be filled by the General Committee at any regular meeting.

7. There shall be joint committees, which shall consist of the committees of the employees' representatives, as herein provided, and representatives who shall be named by the management, whose number may equal, but shall not exceed, the number of the employees' representatives.

8. The joint committees shall select their own officers and arrange their own procedure, subject to appeal in case of controversy to the Joint Committee on Rules.

9. Whenever the word "committee" is used throughout this instrument, it shall mean the separate committee of employees' representatives. Whenever the words "joint committee" are used, they shall mean the joint committee as provided for in section 7 hereof.

10. By unanimous consent of the Joint General Committee, the membership of any committee or joint committee may be reduced or increased, or any two or more committees or joint committees may be combined, or any new or special committee or joint committee may be formed.

Committee Meetings

1. Regular meetings of committees shall be held once a month.

2. On alternate months the committees shall meet as joint committees.

3. Committees shall meet between the hours of 3 and 5 in the afternoon, unless otherwise arranged for on joint approval of the chairman of the employees' representatives and the management's representative.

4. Special meetings of committees and of joint committees may be held as occasion may require, on approval of the chairman of the employees' representatives and the management's representative.

5. For time necessarily occupied in actual attendance at regular meetings, or at special meetings of conference jointly approved, representatives shall receive from the company payment commensurate with their average earnings.

6. Representatives shall have the right to appear before and be heard by a committee on any matter of concern to the employees of the division they represent.

7. A committee when concerned with matters which especially apply to any particular division, or class of employees shall have the right to invite into conference either or both the representatives of the employees and of the management, likely to be specially interested in such matters.

8. Any matter may be referred by the management through the management's representative to any committee or joint committee, for consideration and report; and likewise, any matter may be presented by a committee, or joint committee, to the management, through the management's representative, for consideration and report.

9. The Joint Committee on Rules shall arrange a suitable place for meetings of the representatives, and of the several committees and joint committees.

Annual Conference

An annual conference between all of the employees' representatives and representatives of the management shall be held at a time and place determined by the Joint Committee on Rules, who shall be in charge of the procedure at such conference.

Principles and Policies Governing Relations Between Management and Employees

1. The representation of employees herein provided shall in no way abridge or conflict with the right of employees to belong to labor unions.

2. For offences other than such as are publicly posted, employees shall not be discharged without first having been notified that a repetition of the offence will be cause for dismissal. A copy of this notification shall, at the time of its being given to an employee, be sent also to the manage-

representative, and be retained by him for purposes of future reference.

The management of the works and the direction of the working forces, including the right to hire, suspend, discharge, or transfer, and the right to relieve employees from duty because of lack of work, or for other legitimate reason, is vested exclusively in the management; and, except as expressly restricted herein, these rights shall not be abridged by anything contained herein.

Violation of Any Law:

Special attention is called to the following:

(a) Carrying concealed weapons; fighting or attempting bodily injury to another employee; drunkenness; bootlegging; habitual use of drugs; conduct which violates the common decency or morality of the community.

(b) Offering or receiving money or other valuable consideration in exchange for a job, better working place or any advantage in working condition.

(c) Stealing or malicious mischief, such as destroying or hiding any property of other employee or of the company.

(d) Inhuman abuse of livestock or negligence resulting in their death.

Violation of the Following Safety Rules:

(a) Carelessness in regard to accident and safety of fellow workmen.

(b) Riding on standard or narrow gage equipment or on any moving machinery where not assigned.

(c) Running up blocks on cranes.

(d) Violation of rules governing repairing or oiling of moving machinery.

(e) Failure to wear safety goggles that have been provided.

(f) Smoking within prescribed limits or other places where such practice is forbidden.

Insubordination (including refusal or failure to perform work assigned) or use of profane or abusive language toward fellow employees or officials of the company.

Absence from duty without notice to and permission from superintendent or foreman, except in case of sickness or cause beyond his control of a character that prevented his giving notice.

Harboring disease that on account of his own carelessness will endanger fellow workmen.

Changing working place without orders or prowling around the works from assigned place.

Falsifying or refusing to give testimony when accidents are being investigated, or for false statements when application and physical examination is being made.

Neglect or carelessness resulting in damage to railroad equipment, or neglect of car dropper to properly set brakes on railroad cars in his charge.

Robbing railroad or narrow gage car journal boxes of oil.

Wilful neglect in care or use of company's property.

Obtaining material at storehouse or other assigned places on fraudulent orders.

Procedure for Adjustments

Any matter which in the opinion of any employee requires adjustment, and which such employee has been unable to adjust with the foreman of the work on which he is engaged, and any matter deemed proper to be submitted by any committee, may, in the case of such employee, be taken up either in person or through any representative of his choosing, or in the case of a committee, may be taken up by the committee with the following named persons, and in the order named:

First—The superintendent of the department to which the division belongs.

Second—The management's representative.

Third—The superior operating officers of the company, who shall endeavor to effect a settlement, or who may with the approval of the employee, or representative, or committee submitting the proposition, refer the same to any joint committee.

Where a satisfactory disposition of any such matter has not been effected within a reasonable time, the employee, through his representative; or the committee; or the management, through the management's representative, may require such matter to be referred to the Joint General Committee on Appeals, by a request in writing addressed to said committee, specifying in detail the matter requiring adjustment and the reasons which warrant its consideration by said committee.

The Joint General Committee on Appeals shall consider any such matter with reasonable promptness at a regular or special meeting, and may adopt such means as are necessary to ascertain the facts and effect a settlement.

If the Joint General Committee on Appeals fails to effect a satisfactory settlement, the matter shall be referred to the president of the company. If the president of the company and a majority of the employees' representatives on the Joint General Committee on Appeals fail to effect a satisfactory settlement, they shall refer the matter to arbitration as they may determine at the time, according to the nature of the controversy.

If the president and a majority of the employees' representatives on the Joint General Committee on Appeals are unable to agree upon an arbitrator, or arbitrators, the president shall select one arbitrator, and the employees' representatives on the Joint General Committee on Appeals shall select one arbitrator; and the two arbitrators thus selected shall endeavor to settle the matter in dispute.

If the two arbitrators are unable to settle the matter in dispute, they shall select a third arbitrator. If they cannot agree upon a third arbitrator, the third arbitrator shall be selected by the Presiding Judge of the District Court of the United States for the Northern District of Ohio, Eastern Division; and the decision of any two of the three arbitrators thus chosen shall be final and binding on both parties.

Independence of Employees' Representatives

1. It is understood and agreed that a representative shall be free to discharge his duties in an independent manner without fear that his individual relations with the company may be affected in the least degree by any action taken by him in good faith in his representative capacity.

2. To insure to each representative his right to such independent action, he shall have the right to take the question of an alleged personal discrimination against him on account of his acts in his representative capacity, to the management's representative, to any of the superior operating officers, to the Joint General Committee, and to the president of the company.

3. Having exercised this right in the consecutive order indicated, and failing a satisfactory remedy within 15 days, a representative shall have, for the ensuing 15 days, the further right of appeal to the Secretary of Labor of the United States. The company shall furnish the Secretary of Labor with every facility for the determination of the facts; and, as respects any representative deemed by the Secretary of Labor to have been unfairly dealt with, the company shall make such reparation as the Secretary of Labor may deem just.

Amendments

Any method of procedure hereunder may be amended at any time by a two-thirds vote of the entire membership of the Joint General Committee and the Joint Committee on Rules, or by a majority vote of the employees' representatives present and a majority vote of the representatives of the management present at an annual conference.

Cost of Administration

The company shall defray such expenses as are necessarily incidental to the activities herein provided for. Wherever possible, expenses shall be incurred only upon authorization by the Joint General Committee.

Right of Termination

This plan having been adopted in the belief that it will prove of permanent value and usefulness, and with the intention that it be given a full, fair, and honest trial, the plan is entered into, subject to the express condition and limitation that it may be terminated after Jan. 1, 1920:

(a) Upon three months notice by the board of directors of the company, if said board has reason to believe that the mutual benefits anticipated by its adoption have not been realized;

(b) Upon the expiration of three months after a majority of the electors shall have voted in favor of its termination at a special election called for that purpose by a majority vote of the representatives and held under the supervision of the Joint General Committee.

The Duplex Machinery Co., machinery dealer, Leader-News Building, Cleveland, moved Dec. 1 to the Bradley Building, 1227 West Sixth Street, where it has opened a wareroom and sales office. It has secured 5000 sq. ft. in floor space on which it will display a line of new and used equipment. The company is a partnership composed of G. J. Hawkey, manager, and W. L. Werley, sales manager.

The Hess Steel Corporation, Baltimore, has established a branch office at 517 Widener Building, Philadelphia. Charles O. Rowe district representative, will be in charge.

War Industries Board and Iron and Steel

Rail Prices Decided on Orders for France but Not for Home Roads—Winding Up All Price-Fixing Activities

WASHINGTON, Dec. 10.—The whole question of the Government's relations to the iron and steel industry will probably be determined at tomorrow's meeting here of the representatives of the American Iron and Steel Institute with the War Industries Board. The chief question concerns the fixing of prices after Dec. 31. It seems a foregone conclusion that the meeting will determine against any further price fixing by the Government. There have been suggestions that price fixing in certain lines might be necessitated by clauses in Government contracts based on such fixed prices. Beyond this, however, the Government has no interest in continuing the price fixing policy. All the officials here seem to favor leaving the question entirely to the representatives of the industry. As the latter has proved exceedingly capable of taking care of itself, the general impression is that the steel manufacturers will prefer to cut loose from all forms of Government guidance or interference. This is in line with President Wilson's recommendations to Congress and the War Industries Board has taken the same stand.

At the same time, the War Industries Board seems anxious to drop all other lines of control over the industry. Priorities, retrenchments, conservation programs have been generally dropped overboard. Whatever of conservation is to be maintained will have to be maintained by the industry itself, by voluntary agreement. The Priorities Division has canceled all restrictions except as to passenger automobiles and automobile tires and casings. Even this is expected to drop out Dec. 31. It has been continued only at the request of representatives of the industry itself, apparently because they believe that it would help to stabilize that industry.

Prices Fixed on Rails for France

A decision to abandon the price fixing policy will end one of the long controversies with which the Price Fixing Committee of the Board has dealt. This concerns the payment for steel rails. Four months ago the Price Fixing Committee was ready to name a price of $55 per ton for Bessemer steel and $57 for open hearth steel rails. The United States Railroad Administration vigorously opposed this, and succeeded in preventing its actual announcement. The Railroad Administration demanded a large cut from the figure named by the committee.

The fight of the Railroad Administration has been successful in that no price is now to be named for domestic purchases. A large number of contracts, however, have been made for steel rails shipped overseas and these were to be based on Government prices. To meet the requirements of those contracts, the committee has fixed a price, but has declined to make it public. It is reported to be on the $55-$57 basis, but as only five corporations furnished rails on these contracts, the Price Fixing Committee felt that it should not make its position public.

The last official announcement made by the Price Fixing Committee promulgating iron and steel prices was the following:

"The Price Fixing Committee of the War Industries Board, acting upon the request of various Government agencies, that it make official the differentials recommended by the American Iron and Steel Institute upon cast iron pipe, has fixed the following maximum base prices per net ton of 2,000 lb. upon cast iron pipe, 6 in. and larger, Class B American Water Works weight or heavier, effective from Oct. 1 to Dec. 31, 1918, inclusive, $60 f. o. b. Birmingham, $67.70 f. o. b. New York and $66.80 f. o. b. Chicago

There will be little left of the War Industries Board after Jan. 1. The demobilization of that body began almost immediately after the signing of the armistice. Many of its "dollar-a-year" experts have returned to their own work. Others are putting the finishing touch upon their section reports and are preparing to leave Washington. The buildings of the board are largely deserted. Just how any future work of this institution is to be carried out has not been decided. Most of it, however, will be dropped entirely. The fragments that remain will probably be added to existing Government departments. Because of the conflicting interests involved in the apportionment of various sections to Government departments, Chairman Baruch is expected to appoint a special commission which will make recommendations concerning future work. Chiefly this will consist in turning the statistics and other data collected by these bureaus over to Cabinet departments.

The archives of the War Industries Board represent by far the most comprehensive picture of American industry today. Practically every phase of manufacture and commerce is exhaustively covered. In some cases copies will probably have to be made of some of this information so that it may be distributed among interested departments. Much of it, of course, is confidential and it is expected that the commission will decide that this should be returned or be destroyed.

Few of the experts could afford to accept the $1,800 to $2,500 a year positions which might be open to them under the closely skimped appropriations allotted to such important institutions as the Bureau of Standards or the Bureau of Mines. Only a radical change in the appropriation policy of Congress toward these important bureaus could make it possible to keep these men in Government service.

Chairman Baruch Resigns

The resignation of Chairman Baruch of the War Industries Board has been accepted by the President to go into effect Jan. 1. In sending his resignation to President Wilson, Mr. Baruch paid a high tribute to the work of his assistants on the board:

"Each and every one worked with a spirit that made great personal sacrifice seem a privilege and not a burden. In order that a permanent record may be made of their unselfish service, I shall ask the privilege of forwarding to you a list of the members of the board, of those associated with them, including regional advisers, war service committees and State councils of national defense. I should like also to bear witness to the helpful coöperation which the War Industries Board at all times received from all departments and agencies of the Government.

"All our efforts, however, would have fallen short had not the entire country responded in a whole hearted manner. Unlimited credit is due to the industries of the country,, employees and employers alike, for the way in which they responded to all calls made upon them. Actuated by a desire to serve and not to profit, they pursued the common purpose of bringing the war to a successful conclusion in a manner in which every American may well take a just pride."

To this President Wilson replied: "I entirely concur in your estimate of the services of your associates, and I want to add my own conviction that the chief cause of the success of the board and of its happy relations with the departments of the Government has been your own ability, tact and devotion to duty."

Sections Already Discontinued

So far the actual disbanding of the War Industries Board has been limited to the following sections:

Permit Section of the Steel Division, James S. Barclay, chief.

Special Advisory Committee on Plants and Munitions, Samuel M. Vauclain, chairman.
Fire Prevention Section, William H. Morrill, chief.
Non-war Construction Section, Donald R. McLennan, chief.
Housing Section, Nathan Hayward, associate chief.
Stored Materials Section, John F. Wilkins, chief.

These sections have turned over their records and made up their final reports. Other sections are being rapidly demobilized. The Machine Tool Section, for instance, has announced to the trade that it will disappear Saturday, and all reports have been discontinued.

In line with the general Government policy of removing restrictions upon industries, the United States Shipping Board has freed manufacturers of steel ships from the necessity of securing Government permission for the construction of vessels on domestic orders. For foreign steel tonnage, these permits must still be obtained. However, wooden shipbuilding, for foreign as well as domestic orders, has been entirely freed from this restriction.

No Buying of Railroad Equipment

The question of railroad equipment is still one of the puzzles of the steel situation. The trouble that has arisen over the allocation of 100,000 cars to the railroads by Director General McAdoo, after the roads had declined to accept them, has prevented any present purchasing of cars. Now it is reported here that the Railroad Administration is even considering attempting to cancel some of the unfilled orders. No decision, however, will be reached until after the preliminary hearing of the Clover Leaf case this week. The fact that the Railroad Administration is holding back on all purchases has not been without its general effect, because if the roads hesitate about buying at present prices, it seems certain that smaller buyers will not take chances.

Another Washington complication in the general industrial situation is connected with the fate of the war tax bill in Congress. After months of work, it has finally come into the Senate in a thoroughly revised shape from that which the House has produced. Most of the sections have been trimmed away, and the whole has been simplified exceedingly. The great bone of contention, however, is the fight against the attempt of the majority to fix the taxes for the fiscal year of 1920. Opponents of the plan declare that they will filibuster the bill to death—and that is easy because this Congress expires March 4.

Continued Efforts to Place Released Soldiers

WASHINGTON, Dec. 10.—Government officials continue actively at work on the machinery by which they hope to find places for the demobilized soldiers as well as for the war workers who must now find peace jobs again. So far, there has been no report of heavy unemployment in any section. But even the Labor Department officials admit that this is largely because the demobilization itself had not reached a high stage when their last figures were compiled. The statistics gathered from 150 industrial centers cover only a fraction of the big industrial plants, and the last available datum is dated Nov. 29, so that there has been no opportunity to take account of December conditions.

Nathan A. Smyth, assistant director general of the United States Employment Service, was sent to New York last week to tell the Labor Construction Conference held there that the situation was one that did not warrant enthusiastic optimism. His speech was the more significant because it had the advance approval of his superiors. He said: "Demobilization is upon us with a rush at the beginning of the winter weather when outdoor jobs are few. Dominating considerations of economy make the most prompt possible curtailment in production of equipment and munitions of war a necessity. Under a wise policy as to cancellations, as much opportunity as the urgency of the situation permits is being given by the Army to the manufacturers of war goods to shade off in peace production. Plants having no peace-time value are being closed gradually. Nevertheless, during the next three months, millions of war workers will have to find new jobs. Up to date, reports from all over the country indicate that the industrial transition, if not complicated by the demobilization of soldiers, can be accomplished speedily without serious and protracted unemployment."

Rapid Demobilization a Grave Factor

But it is this demobilization which threatens to be a grave factor in the situation. Even Mr. Smyth knew this, for he added: "For reasons, the adequacy of which I am not in a position to discuss or determine, it has been found necessary to start the demobilization of soldiers at once and to plan to push it with the utmost possible speed. Soldiers are being discharged by the thousands daily, on the basis of military units with no reference to whether or not they are needed in industry. In the units whose demobilization is postponed are thousands more for whom positions are open and whose return to civilian life would expedite the return of the nation to a normal busy industrial basis. An entering wedge has been inserted under which individuals now especially needed can get back; but this procedure at present is the exception rather than the rule, and the vast bulk of discharges is of men released without regard to industrial conditions. . . . The great danger in the coming four months is that there will not be jobs enough to go round; that unemployment will come with attendant misery and social unrest at a time when anarchistic tendencies are contagious."

To take care of this situation, the Department of Labor has inaugurated a far-reaching system which includes the complete organization of the National Council of Defense, with its 184,000 affiliated units. So far, however, there has been much more machinery than result. Each week, telegraphic summaries are received from a list of industrial centers, covering certain factories in those centers intended to be representative of the community condition. They have of necessity been limited. However, the men who have been in charge of this work declare that the situation revealed so far has been gratifyingly free from reports of surplus workers or bad labor conditions.

Industrial Unrest Becoming More Marked

The reports of men out of employment, however, are gradually catching up with the vacancies everywhere. To make matters worse, general conditions of industrial unrest have been becoming more marked. The National War Labor Board has declined to consider any more of these cases, directing that those filed later than Dec. 5 be turned over to the regular mediation boards of the Department of Labor. There are still a lot of strike reports from all over the country based on all kinds of complaints, many of them solely against the return to an 8-hr. day.

The place of Frank P. Walsh on the National War Labor Board—as joint chairman with ex-president Taft—has been taken by Basil M. Manly, who has done considerable labor research work for the Department of Labor and other Governmental departments.

Labor Department officials declare they expect an increase in emigration next year, which may help to ease the general labor situation. When spring returns, it also is expected that a great number of workers will be reabsorbed by the farms. Another feature upon which they count for relief is the fact that during the last two years immigration has been at a minimum.

Two months ago the mention of Bolshevism as a possible outgrowth of American labor difficulties was met by vigorous denunciation in Washington's labor circles. When the first effects of the armistice made this danger a little more apparent to the general mind, the labor officials here were even more vigorous in trying to keep the words "anarchy" and "Bolshevism" out of print. Now Mr. Smyth used the former in his New York address, and an official editorial in the

United States Employment Service Bulletin declares: "Unemployment on a large scale breeds Bolshevism, and it will be the function of the Employment Service during the coming months to see that soldiers and factory workers are found employment in the resumed and extended industries of peace."

War Department Adjusting Contracts Involving Billions

WASHINGTON, Dec. 10.—The problem of canceling and readjusting contracts is still the chief task of the War Department. It now seems certain that Congress will come to the rescue of the contractors who were affected by the ruling of Comptroller Warwick of the Treasury, who refused to pay on contracts which were not made in strict compliance with the letter of the law. Chairman Dent of the Military Affairs Committee introduced a bill which would validate these contracts and it is expected that both houses will pass it with promptness.

Assistant Secretary Crowell of the War Department and Major General Goethals, director of storage and traffic, appeared before the committee in favor of the measure. Comptroller Warwick explained the attitude of his department, but made no objection to the passage of the bill. He estimated that the contracts involved totaled $1,000,000,000.

War Secretary Has $1,000,000,000 for Adjustments

The Dent bill, as amended by the committee, gives the War Department judicial power to pass upon the adjustment of contracts and to pay an equitable amount in making all settlements. The bill specifically provides that the allowance so made by the Secretary of War shall be final and conclusive and without appeal. The $1,000,000,000 of readjustment which would thus be handled by the Secretary of War, as a final arbitrator, is greater than all the claims ever heard by the Federal Court in the history of this Government.

The cancellations of contracts both in the War and Navy Departments is still looked upon in Washington as a matter chiefly between the Government and the industries involved. As a result, there has been little definite publicity as to details. The Government authorities fear that the publication of cancellations might arouse unrest, and they are trying to avoid this by maintaining silence as to their work. Secretary Baker told the House Appropriations Committee that the cancellations up to last week totaled $2,613,000,000 out of a total "obligated but not disbursed" of $4,250,000,000. The Ordnance Bureau's share of cancelations according to Secretary Baker totaled $800,000,000; to aircraft production was allotted $402,000,000; to the engineering corps, $229,000,000, and to the quartermaster corps, $400,000,000. The artillery and ammunition cancellations were $750,000,000; rifles and machine guns, $53,000,000; motor vehicles, $282,000,000; airplane parts, $256,00,000; other iron and steel products and railroad materials, $53,000,000; and material and facilities for Construction Division, $150,000,000.

In all, it is expected that $7,000,000,000 out of the $24,000,000,000 which had been appropriated to the War Department for the current fiscal year probably will be returned to the treasury. Out of $2,600,000,000 asked by the Navy Department for next year, $1,000,000,000 is to be released.

Secretary Baker said to the Appropriations Committee: "I think it would be disastrous simply to close the door of every factory working on war orders and to turn everybody adrift all of a sudden without any sort of thought as to where they are to go or what is to be done." Chairman Sherley of the Appropriations Committee expressed the opinion that the labor situation could take care of itself, because he believed there was a shortage of labor in the country. With this view Secretary Baker said he was inclined to agree.

"But," he added, "I think it would be perfectly easy to put out some telegrams to-day that would throw the country into a state of turmoil. We could send out a number of telegrams which would practically put the labor of the country adrift upon the streets."

Neville Island Work To Go Forward

In the same testimony Secretary Baker explained to the committee that Assistant Secretary Crowell has been conferring with the officials of the United States Steel Corporation in an effort to work out a modification of the Neville Island plant contracts. He said that the department planned to remain within the $40,000,000 limit, but to erect a plant which could, if necessary, be expanded without economic loss.

"Do you still intend to carry out your plans of creating a big gun plant at Neville Island?" asked Chairman Sherley.

"Yes, sir," was the reply of Secretary Baker, "that is the judgment of our ordnance people."

"Could you not, at much less cost, find some plant already in existence that could be used for your heavy artillery requirements?" asked Representative Cannon.

"I doubt that," answered Secretary Baker; "the only place would be at Bethlehem, but I doubt whether that would be as economical as Neville Island."

Factory Building Stopped

The Construction Division of the War Department announced that it had abandoned the construction work at the Locomobile Co. of America's plant at Bridgeport, Conn., as well as in connection with new buildings for the Hero Mfg. Co. at Philadelphia. It also announced the abandonment of additional construction at Camp Lee, Va.; North Camp Jackson, S. C.; State School for Deaf at Columbus, Ohio; Elizabethport, N. J.; Camp Custer, Mich.; Delaware City, Del.; Camp Sherman, Ohio; Camp Grant, Ill.; Clear Springs Proving Grounds; Sea View Hospital, Staten Island, N. Y.; Camp Beauregard, Ala., and Camp Fremont, Cal.

The War Department has not yet reached a conclusion concerning the future of the Government arsenal ammunition industries. The general staff is reported to oppose a program of Government operation of manufacturing plants on a large scale. These officers take the view that the Government plants should be used more as laboratory and experimental plants rather than for quantity production. They prefer depending upon private industry to meet war emergency. The Government plants, however, could be used to furnish a check on private contract expenditures.

Chicago Tool Trade More Hopeful Pending Readjustment

CHICAGO, Dec. 9.—Though there has been little to change the general situation with the machine-tool trade in Chicago in the past week, a better feeling is manifest, especially on the part of dealers. Their apprehension that they might soon face disastrous conditions has been modified, although their problems still exist. In one instance, instructions to resume work on a large suspended order filled a gap of no small proportions, while here and there are reported other orders to resume where machines were well along toward completion.

Indications are that there will be quite an exodus from this territory of men who want to get in early touch with what is done at the meeting of the National Machine Tool Builders' Association in New York, Dec. 10 and 11. It is probable that never has a meeting of the association had to deal with questions of such vital commercial interest to the industry. The subject of cancellations and readjustment will, of course, be uppermost.

Conservative machine-tool men lay stress on the necessity of a give-and-take attitude on the part of the trade, pointing out that its good work for the winning of the war should be followed by fair consideration for all involved, including the Government and labor.

Replies received in response to appeals for protec-

tion against possible disastrous loss by machine-tool sellers have aroused resentment in the senders because of the lack of appreciative interest on the part of the respondents. One reply stated that people must realize that war work had to stop, and now that it has, to a great extent, the machine-tool trade is at liberty to "hustle" for the big business which was held up by the war. The trade needs no admonition to "hustle" for business, and the senders of the appeal believe it should not have been dismissed in such an offhand way.

Still Making Shells and Adapters

Both shell and adapter work is being continued in various shops in or near Chicago, but usually at a lessened rate of production. The Frost Mfg. Co., Kenosha, which is running 100 per cent on adapters, has stopped night work, and on that basis expects to operate till January at least. The officials of this company, which ordinarily makes plumbers' brass goods, look for a big business next year, and, while planning to dispose of some special equipment will come into the market for additional machinery for the regular line of the company.

Nothing of importance in the way of inquiries has yet come from the railroads, but encouragement is found in the fact that budgets for next year are being prepared, and mechanical and operating departments are making up lists of the tools they will buy, if permitted. It is hoped by machine-tool men that the policy of the Government as to railroad buying will undergo a change in the near future. Probably the most prolific source of business at this time is the tractor-building industry.

Local dealers look for a surplus of heavy tools in the second-hand market, but inquiries indicate that the Pacific Coast and the Pittsburgh district will absorb a considerable number of these machines. Shipments on stock orders are beginning to be made more freely to the dealers, and their floor space is filling up. In some cases, dealers canceled stock orders where they were permitted to do so.

Labor Readjustment in Progress

The readjustment of labor is taking on an aspect of trouble in some places. In Racine, Wis., some of the plants on war orders, when ordered to cease night work, went on a 10-hr. instead of an 8-hr. day, and strikes are threatened. At the Rock Island Arsenal, many of the women who were employed in the tool cribs and at other work have been let go, and if a man wants to go elsewhere no special effort is made to hold him. Some of the officers who obtained commissions and entered the arsenal because of their mechanical or technical knowledge, are now anxious to get to their regular employments. At the Great Lakes Naval Training Station enlisted young men who are being trained in the taking down, assembly and repair of various arms, are becoming dissatisfied with their situation. They ask why, now that peace is at hand, they should continue to work for the Government at $1 a day when they can do so much better at home. Of course, the discharge of such men is under way. In every direction a better supply for the labor market is indicated.

Canadian Munition Workers Unlikely to Be Long Idle

TORONTO, Dec. 7.—Canadian concerns working on war contracts employ approximately 25,000 hands, greatly in excess of pre-war needs, and as most of these establishments expect to drop to figures somewhere around their usual forces, it means that from 15,000 to 18,000 munition workers now engaged will have to find employment elsewhere. It is not expected that any difficulty will be encountered in placing all the skilled mechanics let out, as there is a large demand for such mechanics and also for common labor by shipbuilding plants, car shops, and iron and steel plants, as well as for companies working on domestic orders, especially those building farm tractors and implements. The Massey-Harris Co., Toronto, will start a campaign immediately for the securing of 100 molders, which means the employing of 1000 men in the shops. This company has enough business in sight from Ontario alone to keep its plant operating to capacity for a year, and there is also a great demand for its products in Western Canada, not to say anything of the export trade to which the company is now looking forward.

Hamilton Industries in Good Condition

Predictions by sundry economists that a period of industrial depression was bound to follow the termination of the European war are not going to materialize as far as the industries of Ontario are concerned. Shutdowns are not looked for, while in a few isolated cases war workers may be thrown on the market, manufacturers are of the opinion that all this available labor will be quickly absorbed. There is plenty of foreign business in sight. A heavy demand for machine tools is expected in foreign countries, including all the belligerent nations. Much rolling stock is in demand. A number of orders have been placed with Hamilton concerns for agricultural implements from South American nations. Large orders for equipment have been received from Belgium and France, and now that the submarine menace has ceased export business will gradually revert to normal, and orders which have not been delivered on this account will be forwarded.

Manufacturers of Hamilton are taking an optimistic view of the situation. The Canadian Westinghouse Co. is flooded with peace orders which will keep its plant working for the next four months; none of the equipment used in the manufacture of munitions will be scrapped as it is adapted for use in future undertakings. The Tallman Brass & Metal Co. has large orders on hand which were held up owing to the shortage of certain materials; new orders of the company are both domestic and foreign, and it will be able to resume its export trade in brass lines to Australia, Siam and South America. The Canadian Cartridge Co., one of the largest makers of munitions in the Dominion, has lost no time in preparing for the period of readjustment, and will divert its efforts into a new channel entirely; believing that a large market is opening in Canada and other countries for steel barrels, the company has erected an addition to its plant at a cost of $100,000 for the manufacture of these commodities, and will commence operations almost immediately. The National Steel Car Co. has received large orders for rolling stock from the Canadian, Malay and Indian governments; the company is badly in need of more labor. The Dominion Foundries reports plenty of new work in sight, chiefly heavy castings and forgings, and no shutdown is expected.

The Hamilton Bridge Works Co. states that large orders for shipbuilding material, principally angle bars, will keep it busy for months; the company also has large orders for structural steel and iron. The Canada Steel Goods Co. has large foreign and domestic orders. The Canadian Drawn Steel Co.'s output is chiefly used for agricultural implements and equipment for shipbuilding concerns; it has sufficient Canadian orders to keep its plant operating for several months, and expects its export business to pick up with improved shipping facilities. The Frost Wire Fence Co. was never engaged in war work and has sufficient orders to keep it busy for some time. The Oliver Chilled Plow Co., which has not engaged in war work, is well supplied with contracts for farm implements, etc., to keep its plant operating for several months; large demands for tractors has come from South America, Australia and Western Canada, while gang plows and other agricultural implements are in good demand. The International Harvester Co. has orders that will keep it going for the next twelvemonth, including business from New Zealand, Australia, South Africa, Great Britain and Italy. The Ford-

(*Continued on page* 1490)

Iron and Steel Markets

A REDUCTION IN PRICES

Manufacturers Go to Washington with Lowered Schedules

Expected Pig Iron Cut, $3, with $5 to $10 Off Finished Materials

Unexpectedly the general committee of iron and steel manufacturers reported to a large meeting of producers in New York, Dec. 9, in favor of a "moderate" reduction in prices of pig iron and all rolling mill products effective Jan. 1. This recommendation was practically indorsed by a unanimous vote of the meeting to put the matter in the committee's hands with power.

As the outcome of the committee's conference with the War Industries Board at Washington today (Wednesday) announcement is looked for of lower prices throughout the list, with the exception of iron ore. It is expected that pig iron will be reduced $3, plates and shapes $5, and sheets and tinplates $10 per ton, with other prices in proportion.

While the War Industries Board has indicated that there will be no Government prices on iron and steel after Dec. 31, it may announce the new schedule as prices which the manufacturers will seek to maintain, as representing a fair readjustment from the war level. On the other hand, the announcement may be made solely by and on behalf of the manufacturers.

The past week has brought further export and domestic business to the steel companies, some of them booking more than their current output; but, as heretofore, it was an aggregate of small replenishing orders. The belief that with the heavy cancellations by England, France and the Government at Washington, demand for some months would fall below capacity is still the dominant consideration.

Pig iron sellers are disposed to see a stronger situation in their trade than in steel, holding that both in this country and in Great Britain blast furnace building has not kept pace with new steel works capacity. Hence the inquiries, still quite indefinite, for American pig iron for shipment to England.

A disturbing feature is the effort of pig iron buyers, some of them large companies, to cancel iron bought for the first half of next year. Sellers are resisting stiffly, even in cases of Government allocation and for work which the Government may have canceled.

The intimations that some Government representatives are canceling iron and steel orders in the expectation of replacing the material at lower prices have been no help to an orderly adjustment.

No rail price has been fixed on domestic purchases, contrary to report, and the naming of $55 for Bessemer and $57 for open-hearth rails at Washington means merely the settling basis on Army and Navy purchases for the war on which previously there had been an open price.

The possibility that reduced prices will compel some producers to stop is a factor difficult to measure. Certainly some blast furnaces are running that can only live on war prices.

There is no better promise of buying for the railroads. A Western car works is congested with cars which railroads refuse to accept on the Government distribution, insisting the prices are too high. France, however, has placed 7500 four-wheel cars here and there is a report, with no details as to financing, that an order for 4000 cars for Russia will be reinstated.

Some favorable items in the British market are a good demand for pig iron, and export inquiry for rails, shapes and plates. The call for tin plates is also large. New control prices for the British domestic trade, just announced, effective Feb. 1, in contrast with the movement on this side, represent advances, these being, as shown in our cable report, as much as $10 to $15 per ton on some finished products.

Domestic steel companies still comment on the character of the export inquiry. Much of it is like that which marked the second year of the war, in coming from export houses new to the steel trade. Thus there are not only duplications but some doubt as to the extent to which actual business will result.

With the release of the ocean freight market from control, an unexpected supply of vessels is available. Charters, especially for South America, can be made at rates far below the recent level, and the movement of thousands of tons of machinery and steel products long held up is now possible.

Pittsburgh

PITTSBURGH, Dec. 10—(*By Wire*).

It is the expectation here that some lines of finished steel will be reduced about $5 a ton and pig iron about $2 or $3 a ton at the conference Wednesday in Washington between the General Committee of the American Iron and Steel Institute and the Price Fixing Committee of the War Industries Board. It is understood that an effort will be made to make the new prices at least semi-official—that is, to ask the War Industries Board to stand sponsor for them, in the hope that producers of iron and steel will adhere to them. A feeling is prevalent among steel interests that further reductions will be necessary before consumers will freely enter into forward commitments. Some predict a period of hand-to-mouth buying lasting from three to six months.

There is little pessimism among iron and steel producers, due to a belief that eventually there will be a very large demand for pig iron and steel products. Strictly competitive conditions and a free market, it is believed, will bring a return of high prices even though considerable reductions are made before buyers feel confident that the bottom has been reached.

A Comparison of Prices

Advances Over the Previous Week in Heavy Type, Declines in Italics

At date, one week, one month, and one year previous

For Early Delivery

Pig Iron, Per Gross Ton:	Dec. 10 1918	Dec. 3 1918	Nov. 12 1918	Dec. 12 1917
No. 2 X, Philadelphia	$39.15	$39.15	$39.15	$34.25
No. 2, Valley furnace	34.00	34.00	34.00	33.00
No. 2 Southern, Cincinnati	37.60	37.60	37.60	35.90
No. 2, Birmingham, Ala.	34.00	34.00	34.00	33.00
No. 2, furnace, Chicago*	34.00	34.00	34.00	33.00
Basic, deliv., eastern Pa.	36.90	36.90	36.90	33.75
Basic, Valley furnace	33.00	33.00	33.00	33.00
Bessemer, Pittsburgh	36.60	36.60	36.60	37.25
Malleable Bess., Chicago*	34.50	34.50	34.50	33.50
Malleable Valley	34.50	34.50	34.50	33.50
Gray forge, Pittsburgh	34.40	34.40	34.40	32.75
L. S. charcoal, Chicago	38.85	38.85	38.85	37.50
Billets, Etc., Per Gross Ton:				
Open-hearth rails, heavy, at mill	55.00	55.00	55.00	....
Old rails, heavy, at mill	57.00	57.00	57.00	....
Bess. billets, Pittsburgh	47.50	47.50	47.50	47.50
O.-H. billets, Pittsburgh	47.50	47.50	47.50	47.50
O.-H. sheet bars, P'gh	51.00	51.00	51.00	51.00
Forging billets, base, P'gh.	60.00	60.00	60.00	60.00
O.-H. billets, Phila	51.50	51.50	51.50	47.50
Wire rods, Pittsburgh	57.00	57.00	57.00	57.00
Finished Iron and Steel, Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Iron bars, Philadelphia	3.745	3.745	3.745	3.685
Iron bars, Pittsburgh	3.50	3.50	3.50	3.50
Iron bars, Chicago	3.50	3.50	3.50	3.50
Steel bars, Pittsburgh	2.90	2.90	2.90	2.90
Steel bars, New York	3.17	3.17	3.17	3.095
Tank plates, Pittsburgh	3.25	3.25	3.25	3.25
Tank plates, New York	3.52	3.52	3.52	3.445
Beams, etc., Pittsburgh	3.00	3.00	3.00	3.00
Beams, etc., New York	3.27	3.27	3.27	3.195
Angles, grooved steel, P'gh.	2.90	2.90	2.90	2.90
Angles, sheared steel, P'gh.	3.25	3.25	3.25	3.25
Steel hoops, Pittsburgh	3.50	3.50	3.50	3.50

*The average switching charge for delivery to foundries in the Chicago district is 50c. per ton.

Sheets, Nails and Wire, Per Lb. to Large Buyers:	Dec. 10 1918 Cents	Dec. 3 1918 Cents	Nov. 12 1918 Cents	Dec. 12 1917 Cents
Sheets, black, No. 28, P'gh.	5.00	5.00	5.00	5.00
Sheets, galv., No. 28, P'gh.	6.25	6.25	6.25	6.25
Wire nails, Pittsburgh	3.50	3.50	3.50	3.50
Cut nails, Pittsburgh	5.00	5.00	5.00	4.50
Fence wire, base, P'gh.	3.25	3.25	3.25	3.25
Barb wire, galv., P'gh.	4.35	4.35	4.35	4.35
Old Material, Per Gross Ton:				
Carwheels, Chicago	27.00	29.00	29.00	31.00
Carwheels, Philadelphia	29.00	29.00	29.00	34.00
Heavy steel scrap, P'gh.	26.00	27.50	29.00	30.00
Heavy steel scrap, Phila.	26.00	27.00	29.00	28.00
Heavy steel scrap, Ch'go,	26.00	26.50	29.00	28.00
No. 1 cast, Pittsburgh	27.00	28.00	29.00	29.00
No. 1 cast, Philadelphia	29.00	29.00	29.00	31.00
No. 1 cast, Ch'go, net ton	26.00	27.00	29.36	23.50
No. 1 RR. wrot., Phila.	34.00	34.00	34.00	35.00
No. 1 RR. wrot., Ch'go, net	27.00	28.00	29.86	31.25
Coke, Connellsville, Per Net Ton at Oven:				
Furnace coke, prompt	$6.00	$6.00	$6.00	$6.00
Furnace coke, future	6.00	6.00	6.00	6.00
Foundry coke, prompt	7.00	7.00	7.00	7.00
Foundry coke, future	7.00	7.00	7.00	7.00
Metals, Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Lake copper, New York	26.00	26.00	26.00	23.50
Electrolytic copper, N. Y.	26.00	26.00	26.00	23.50
Spelter, St. Louis	8.25	8.25	8.40	7.50
Spelter, New York	8.60	8.60	8.75	7.75
Lead, St. Louis	6.75	6.75	7.75	6.37½
Lead, New York	7.05	7.05	8.05	6.50
Tin, New York	72.00	70.00	75.00	86.00
Antimony, Asiatic, N. Y.	8.50	8.50	9.50	15.25
Tin plate, 100-lb. box, P'gh	$7.75	$7.75	$7.75	$7.75

Pig **Iron.**—It appears that there is not unanimity of opinion among merchant pig iron interests as to the necessity or advisability of reducing prices $2 or $3 a ton as intimated may be done. The new prices, it is asserted, will in some instances be below present production costs and quite a number of high cost furnaces will probably be blown out. A majority of sellers think that present selling prices are none too high in relation to the cost of ore, coke and labor. Moreover, they point to the fact that just before the signing of the armistice the War Industries Board had estimated a pig iron shortage for the year amounting to more than 1,000,000 tons. Despite the discontinuance of a great deal of war work, pig iron producers believe that a large part of this shortage still exists and that a good demand for iron even at present prices would eventually develop. Even though pig iron prices should be several dollars a ton lower during the first quarter of next year, it is believed by some that conditions of supply and demand will bring about higher prices later on. It is significant that a leading seller of Bessemer iron is now quoting $40 a ton for first quarter delivery, though frankly admitting that it does not expect to close any business within the near future at this price. It is the understanding that first quarter contracts will be adjusted to whatever price is agreed upon at the conference in Washington Wednesday. Despite the uncertainty as to prices, which has been paralyzing new business in some lines, there have been sales of pig iron during the past week at the Government prices. Two small lots of foundry iron were sold for first quarter delivery and 5000 tons of basic was sold by a Pittsburgh distributor to a consumer not in this district for prompt delivery. The same seller disposed of about 1000 tons of Bessemer iron in small lots for prompt delivery. About 500 tons of this was shipped from the Cincinnati district to Pittsburgh, notwithstanding the freight rate of $2.90 which made the delivered price $38.10 or $1.50 a ton more than if shipped from a Valley furnace. These sales are pointed to as indication of a real need for iron which consumers must satisfy, regardless of probable readjustment of prices to a lower level.

Basic pig iron, $33; Bessemer, $35.20; gray forge, $33; No. 2 foundry, $34; No. 3 foundry, $33.50, and malleable $34.50, all per gross ton at Valley furnace, the freight rate for delivery in the Cleveland and Pittsburgh district being $1.40 per ton.

Billets and Sheet Bars.—Production and shipments of billets continue on practically capacity basis and supplies are becoming much easier. Consumers, however, are not interested and a few inquiries sent out 10 days or two weeks ago have been withdrawn. Large tonnages of discard rerolling and forging billets are available, but brokers find it difficult to complete negotiations because of different views on prices among producers and consumers. Offerings of discard rerolling billets have been made at below $40. The sheet bar situation is showing great improvement so far as independent mills are concerned, but the leading interest is operating at only 60 per cent of capacity. In the Youngstown district last week sheet mills worked full turns.

We quote 4 x 4 in. soft Bessemer and open-hearth billets at $47.50, sheet bars $51, forging ingots $73, and forging billets $60 base, all f.o.b. at mill, Pittsburgh or Youngstown.

Structural Material.—Two small Navy Department buildings have been placed here within the past week, but otherwise business is at a standstill. Fabricators are fairly busy with ship building work and all of the buildings ordered by the Navy Department remain on the books. Fabricators see no prospect of building activity until prices are on a lower basis. The Michigan Central Railroad has plans for a bridge over the Niagara River which will require about 30,000 tons of steel, but it is reported that nothing will be done on this project until steel prices come down. Builders of investment property take a similar attitude. They see no possibility of renewed building activity on the basis of present costs for material and labor.

We quote beams and channels up to 15 in. at 3c. at mill, Pittsburgh, for fourth quarter.

Sheets.—A very good export demand is reported, particularly for specialties such as electrical sheets. On some of these inquiries, very high prices have been quoted, namely, 12c. per lb. for U. S. electrical sheets, for which the maximum Government price for domestic business is 6.50c., and 16c. for Apollo special sheets, on which the maximum Government price for domestic business is 8.50c. Some of the mills are reported to be seeking profitable export business of this kind rather than sell to domestic trade. The domestic demand for sheets is better, perhaps, than for any other rolled product. The automobile trade continues to seek early deliveries on automobile sheets, but is not ordering for more than immediate requirements. For instance, a leading car builder is placing orders for material needed for 10,000 automobiles, though this represents less than its normal output of cars per month. The leading interest is sold up for at least the first quarter of the year, but other makers are offering deliveries in four or five weeks, depending upon sizes and type of material wanted. An increase in the supply of sheet bars has brought about a larger production, but the mills of the leading interest are operating only at about 60 per cent of capacity. Prices are given on page 1487.

Tin and Terne Plate.—New business in tin and terne plate is not large, but a few small orders are being received, especially from jobbers who are covering immediate requirements. Makers of food containers have good stocks on hand and presumably will delay any further buying until there has been definite development in the price situation. A leading maker of tin plate is diverting sheet bars for sheet production, and tin plate output at its mills is being decreased. Production of terne plate is being gradually increased. We quote tin plate at $7.75 per 100 lb. base box, Pittsburgh. Prices of terne plate are given on page 1487.

Iron and Steel Bars.—There is no forward buying of bars by any consumers, nor are makers disposed to consider contract business which they consider speculative under present conditions. The bar iron situation continues unchanged, as mills in this district are still busy on work for the Emergency Fleet Corporation and the Navy Department.

We quote soft-steel bars rolled from billets at 2.90c.; from old steel rails, 3c.; common iron bars, 3.50c.; bar iron rolled from selected scrap, 4.25c.; and refined iron bars at 5c. at mill, Pittsburgh, for fourth quarter.

Hot-Rolled Strip Steel.—Buyers are awaiting action on Government prices, and business is being held in abeyance, except for a few orders placed by automobile makers for early delivery. Production is still on a restricted basis.

We quote hot-rolled strip steel at $3.50 per 100 lb., Pittsburgh, for third quarter, 50c. per 100 lb. additional being charged for special stamping quality.

Cold-Rolled Strip Steel.—There is comparatively little activity. Production is on a restricted basis.

We quote cold-rolled strip steel at $6.50 base per 100 lb., f.o.b. Pittsburgh, for 1½-in. and wider, 0.100 in. and thicker, hard temper in coils under 0.20 carbon. Boxing charge 50c. per 100 lb.

Shafting and Screw Stock.—There are a few export inquiries for shafting, but no business closed. Automobile manufacturers are placing some orders for immediate delivery. Question is raised by some producers as to whether all of the export inquiries now afloat are bona fide, it being intimated that a number of new export concerns in the East are trying to establish buying connections by sending out inquiries which do not always result in orders. Domestic business in shafting is very light. All Government orders for both shafting and screw stocks were terminated Dec. 1, and commercial orders have not yet been received in sufficient volume to take up the slack. Such orders as are coming in are for small lots and for prompt delivery, indicating that consumers are merely buying just enough to finish up work on hand. Buyers admit that they are awaiting Government action on prices.

For fourth quarter we quote cold-rolled shafting at 17 per cent off list in carloads and 12 per cent in less than carloads, f.o.b. Pittsburgh.

Spikes.—Railroads are buying in small lots, an order having been received this week from one road for 500 kegs. A goodly amount of business is still on the books.

Standard sizes of railroad spikes 9/16 x 4½ in. and larger, $3.90 per 100 lb. in lots of 200 kegs of 200 lb. each or in larger lots. Boat spikes, $5.25 per 100 lb.; rack bolts, $4.90 base in lots of 200 kegs or more; less than 200 keg lots, $1 per 100 lb. extra. All f.o.b. Pittsburgh.

Wire Rods.—A leading independent maker is operating its wire department at about 50 per cent of capacity, owing to steel shortage, but improvement is expected soon. Present output, however, is taking care of demand, which is not large. A few domestic users are buying for nearby requirements, and there are some export inquiries, but little of the latter business has been closed. Prices are given on page 1487.

Wire Products.—Business in wire products consists mostly of small lots for prompt delivery. The hardware trade is buying cautiously to cover immediate requirements only. Prices are given on page 1487.

Bolts, Nuts and Rivets.—Jobbers are not stocking bolts, nuts and rivets, and such demand as comes from them covers only small quantities for which they have an immediate outlet. Leading makers, however, are now operating 100 per cent on Government work and expect to be able to continue on this basis for the next few months. It is stated that there will be no reduction in prices, even after Government prices are withdrawn, unless there should be a lower price on bars. Prices are given on page 1487.

Skelp.—An export inquiry from England for 10,000 to 30,000 tons of skelp has not yet been closed. We quote grooved skelp at 2.90c. and sheared skelp at 3.25c., Pittsburgh.

Hoops and Bands.—There is nothing new to report. We quote hoops and bands at 3.50c. base.

Rails.—There have been suspensions of orders for shell steel which has been rolled on rail mills and a gradually increasing production of rails is being effected. The prices fixed by the War Industries Board on rails for the remainder of this year are $55 per gross ton for heavy Bessemer rails and $57 for heavy open-hearth rails, f.o.b. mill.

Wrought Pipe.—The pipe situation continues fairly strong and makers are not actively seeking business, as they have sufficient orders on their books to take their output for the next few months, at least. Oil country goods are in excellent demand. A leading pipe manufacturer has received partial suspensions of orders for shell forgings in which it has been working throughout the war period. Discounts on wrought iron and steel pipe are given on page 1487.

Boiler Tubes.—Railroads are doing a little buying. Output continues to go largely into marine and locomotive boilers and no let-up in this work is anticipated. Discounts on boiler tubes are given on page 1487.

Plates.—There is an easier situation in plates, but a large volume of ship building and car building business continues on the books. Little new business is being placed, though some attention is being paid to export inquiries, which in most instances have not developed into orders.

We quote sheared plates at 3.25c., Pittsburgh mill, for fourth quarter.

Coke.—Reports from the Connellsville coke region this week indicate that production is gradually returning to a normal basis, the influenza epidemic showing signs of subsiding. With Government control of allocations discontinued, coke shipments are being applied on contracts in the regular way and some consumers are finding it somewhat easier to get supplies, though the

situation as to blast furnace coke is still considerably below what it should be to insure full furnace production. Consumers are not making contracts for next year. Producers believe that the Fuel Administration will continue to fix prices after the first of the year regardless of what is done as to controlled prices on iron and steel, though there is a possibility of a revision on Dec. 31. During the week ended Nov. 30 coke output in the region rose to 256,700 tons, according to the Connellsville *Courier*. This was an increase of 14,000 tons over the preceding week. Coal output was increased to 192,000 tons, an increase of 26,200 tons.

We quote 48 hr. beehive blast furnace coke at $6; 72 hr. foundry coke at $7 and crushed coke over 3¼ in. at $7.50 all in tons of 2000 lb. at oven. We quote by-product coke at $5.70 for run of ovens and $6.70 for selected foundry in all States but Alabama and Washington. To these base prices should be added the freight rate from the competing beehive coke district which takes the lowest freight rates to the point where such by-product coke is produced, except that there shall be added for coke manufactured in New England 75c. for each 5c. above 60c. in the freight charges per net ton (2240 lb.) of coal for water transportation on the coal used in the manufacture of such coke.

Old Material.—Consumers are staying out of the market, with very few exceptions. At present it is strictly a dealers' market, and practically all transactions are purchases by dealers to apply on short orders. Prices show a further decline, but as consumers will not buy at any price the quotations are affected only by the purchases of dealers. Even dealers and brokers do not know what price levels really are. Most of them have contracts at the full Government prices on which they continue to make deliveries. When they made these contracts they expected as their profit only the 50c. per cent commission, which they are permitted to charge. Therefore if they can buy material as less than the prices written in their contracts they make an additional gain equivalent to the reduction that the scrap producer is willing to accept. In some cases the producers have become convinced that prices are due for a further decline and they have been willing to sell at prices offered them by dealers. In one instance a producer accepted $25 for heavy melting steel, and this material a dealer applied on a contract for $29 plus commission. Based on prices which dealers are paying and at which they are willing to sell to consumers, we make the following quotations for delivery in the Pittsburgh district:

Heavy steel melting scrap, Steubenville, Follansbee, Brackenridge, Monessen, Midland and Pittsburgh, delivered	$26.00 to $27.00
No. 1 cast scrap, for steel plants (nominal)	27.00 to 28.00
Bonding rails, Newark and Cambridge, Ohio, Cumberland, Md., Franklin, Pa., and Pittsburgh (nominal)	32.00
Compressed steel scrap	24.00 to 25.00
Bundled sheet scrap, sides and ends, to consumers' mills, Pittsburgh district (nominal)	22.00 to 23.00
Bundled sheet stamping scrap (nominal)	21.00 to 22.00
No. 1 busheling scrap (nominal)	26.00 to 27.00
Railroad grate bars (nominal)	25.00
Low phosphorus melting stock (guaranteed)	29.00
Low phosphorus melting stock (bloom and billet ends, heavy plates)	32.00
Iron car axles (nominal)	35.00
Locomotive axles, steel (nominal)	35.00
Steel car axles (nominal)	35.00
Railroad malleable (nominal)	31.00 to 32.00
Machine shop turnings	17.50 to 18.00
Cast iron wheels	28.00 to 28.50
Rolled steel wheels (nominal)	33.00
Steel bar crop ends (at origin) (nominal)	35.00
Heavy steel axle turnings (nominal)	19.00
Heavy breakable cast scrap	26.00 to 27.00
Cast iron borings	17.50 to 18.00
No. 1 railroad wrought scrap	30.00 to 32.00

Ferroalloys.—No transactions in ferroalloys are taking place, buyers being out of the market. Prices are admittedly weaker, but in the absence of sales definite quotations are impossible. A seller of ferromanganese would take on business for first quarter at $225. There is no demand for ferrosilicon, either 50 per cent or Bessemer grades. The prices quoted below are nominal, as a firm offer by a consumer would undoubtedly bring out considerably lower quotations.

We quote 70 per cent ferromanganese at $250, delivered, and 16 to 18 per cent spiegeleisen, $75, f.o.b. furnace, an addition or deduction of $3.50 per unit being made, when the manganese content is above or below the standard. For delivery over the remainder of the year, and for next year, 50 per cent ferrosilicon is quoted at $135 to $140.

We quote 9 per cent Bessemer ferrosilicon at $55; 10 per cent, $57; 11 per cent, $60.30; 12 per cent, $63.60. We quote 6 per cent silvery iron, $42; 7 per cent, $43; 8 per cent, $45.50; 9 per cent, $47.50; 10 per cent, $50. Three dollars per gross ton advance for each 1 per cent silicon for 11 per cent and over. All the above prices are f.o.b. maker's furnace, Jackson or New Straitsville, Ohio, these furnaces having a uniform freight rate of $2.90 per gross ton, for delivery in the Pittsburgh district.

Steel Expansion in Australia

The steel industry at Newcastle, New South Wales, which is being developed under the direction of the Broken Hill Proprietary Co., Ltd., has had about £2,500,000 expended upon it, according to the British Trade Commissioner in Australia. Until recently the output was largely confined to steel rails and structural material, but merchant bars are now being turned out, while a continuous rod mill imported from the United States has been erected for rolling wire rods, from which fencing and other wires will be drawn. An additional blast furnace, which will double the output of the works, has been built, as well as a steel foundry where all the heavy castings for new parts can be made. Steps have been taken for the establishment of galvanized sheet works. A Newcastle engineering firm has recently designed and constructed an electrically driven three-high mill for rolling merchant bars.

The Australian Electric Steel Co., Ltd., is installing a second electric furnace at its works at Alexandria, near Sydney. The erection of other electric furnaces in Western Australia and Melbourne is also contemplated. Forged weldless steel tires are being made by a 500-ton combined steam and hydraulic press at Castlemaine, Victoria. One company is turning out semi-Diesel engines, while oil-driven tractors are being manufactured by two Melbourne firms. Plants are being installed in various other parts for the manufacture of brass, copper, aluminum, and nickel-silver sheets. The Electrolytic Zinc Co., Ltd., has commenced operations near Hobart (Tasmania) with a plant which has cost £200,000, and is turning out a high-grade electrolytic zinc.

A half interest in the Conti Fire Works Co. has been purchased by J. E. Lawton, J. H. Oehmann and Horace Ward. A new company was incorporated and the following officers were elected: J. E. Lawton, president; J. H. Oehmann, secretary-treasurer; Horace Ward, vice-president; Jake Conti, general manager. The works and general office are located at New Castle, Pa. While the fireworks display business has been curtailed during the war, the plant is working to capacity on war contracts. The new company expects to go into the display business very extensively after peace is declared.

The contention of the Standard Oil Co. of Indiana that the fee imposed by the laws of Wisconsin for a license to do business in the State should be based on the amount of capital stock actually outstanding, and not upon the authorized capital stock, has been upheld by the Supreme Court of Wisconsin. The Secretary of State had ruled that the corporation should pay a fee based on its authorized capital of $100,000,000, while the company insisted that the fee should be paid only upon the $30,000,000 of its capital now outstanding.

A French report on new anti-friction metals, states the *Engineer*, London, includes trials of alloys consisting chiefly of aluminum, cadmium, magnesium, and especially of zinc. Such alloys were designed to reduce as far as possible the use of copper, tin, lead and antimony, and the most satisfactory results are stated to have been given by a compound of 63.3 per cent of zinc, 21.3 per cent of tin, 12 per cent of lead, and 3.3 per cent of copper.

Chicago

CHICAGO, Dec. 9—(*By Wire*).

The hesitancy of consumers in regard to buying is more accentuated, and but little in the way of new business is to be expected until there is some authoritative announcement following the meeting of the industry's representatives and the price-fixing committee of the War Industries Board in Washington Dec. 11. Even thereafter the reluctance to buy may continue until one side or the other is compelled to take action. The general feeling here is that the Government will let go of prices at the end of the year and then competition will resume full sway. There is hope that some method will be worked out whereby the market will be supported. It is suggested, for instance, that should the Government announce its willingness and intent to buy for various departments, and the railroads at certain prices over a certain period, that price would become at least quasi official for that period.

That there can be but a slight reduction without the mills suffering is still maintained, it being pointed out that iron for months to come will be made of ore bought at the Government maximum and delivered subject to high freight rates, while labor obtains war-time wages and says it will take not less. Incidentally few of the mills expect to run full in the next few months and this means less reduction. Exports are expected to be good in volume, but possibly short of popular expectations. It is expected that England will be able to care for the bulk of demand from continental Europe, though our European shipments will expand. Seasoned steel men say it is the world-wide trade they are looking to, not Europe alone. At the same time, they assert Europe has learned much since it has been at war and in the future will operate more speedily and efficiently.

Quiet prevails in every direction, though in steel specialties, such as machinery and alloy steels, some fair business has been booked.

Pig Iron.—Extreme quiet prevails, practically the only business being the occasional placing of lots for prompt delivery which producers cannot fit into contracts. At the same time, the furnaces want to sell for next year, but all consumers are to-day awaiting the turn of events, to follow the meeting of the iron and steel trade and the price-fixing committee of the War Industries Board at Washington, Dec. 11. It is conceded by many that prices will come down, at least a little; the main question is when and how. Meanwhile producers and selling agents are firmly holding to their decision to accept no cancellations. A similar stand was agreed to by the steel casting foundries at a recent meeting in New York. It is noticed that while some melters are stating they must cancel, they, in some cases, accept shipments, and it is understood their cancellation letters are written to put them on record for readjustment purposes.

The following quotations are for iron delivered at consumers' yards, except those for Northern foundry, malleable and steel-making irons, including low phosphorus, which are f.o.b. furnace, and do not include a switching charge averaging 50c. per ton:

Lake Superior charcoal, Nos. 2 to 5	$38.70 to $39.00
Lake Superior charcoal, C to AA	40.70 to 42.50
Lake Superior charcoal, No. 6	41.20 to 41.50
Northern coke foundry, No. 1, silicon, 2.25 to 2.75	35.25
Northern coke foundry, No. 2 silicon, 1.75 to 2.25	34.00
Northern high-phosphorus foundry	34.00
Southern coke, No. 1 foundry and No. 1 soft silicon, 2.75 to 3.25	42.00
Southern coke, No. 2 foundry, silicon, 2.25 to 2.75	40.25
Southern foundry, silicon, 1.75 to 2.25	39.00
Malleable, not over 2.25 silicon	34.50
Basic	33.00
Low phosphorus (copper free)	54.00
Silvery, 7 per cent	50.00

Ferroalloys.—The market remains without test and the leading sellers of ferromanganese say their quotation for 70 per cent is $250 delivered. They say they have no proof that less has been done, but in other directions it is said that $225 would unquestionably be accepted and possibly less. Everyone concedes that the market is weaker. Ferrosilicon and spiegeleisen show no change.

We quote 70 per cent ferromanganese nominal at $250 delivered; 50 per cent ferrosilicon at $155 to $162.50, delivered, and 16 to 18 per cent spiegeleisen at $70, furnace.

Structural Material.—The general contract for the approaches and a bridge to span the Chicago River needed in the Michigan Boulevard improvement, Chicago, has been awarded to the Great Lakes Dredge & Dock Co. About 8000 tons of steel will be needed. The Wausau Iron Works will fabricate 154 tons for a bridge in Sheboygan, Wis. The general situation shows no great improvement. It is reported that certain railroads are averse to taking freight cars built under Government auspices for the reason that they are not now urgently needed, also because of their high cost.

The official mill quotation is 3c., Pittsburgh, which takes a freight rate of 27c. per 100 lb. for Chicago delivery. Jobbers quote 4.27c. for material out of warehouse.

Plates.—Urgent needs from any source can now be more readily cared for and deliveries should be easy in the early part of next year. With present bookings the mills can proceed comfortably for about two months. Ship work continues to absorb plates, but the demand is not so insistent in the matter of delivery.

The official mill quotation is 3.25c., Pittsburgh, the freight to Chicago being 27c. per 100 lb. Jobbers who have stock quote 4.52c.

Sheets.—Numerous inquiries, including several from abroad, indicate an active market when price uncertainties are settled.

Chicago delivery out of stock regardless of quantity: No. 10 blue annealed, 5.52c.; No. 28 black, 6.52c., and No. 28 galvanized, 7.77c.

Bars.—A little business in mild steel bars is being done, but the market shares the general quiet. As heretofore reported, the bar-iron makers did well in November and they are now comfortably situated, much of the tonnage being for delivery in about 60 days. Rerolling rails are appearing on the market more freely and their price is coming down, but so far there is but little disposition on the part of rail carbon bar makers to buy and the situation remains quiet.

Mill prices are: Mild steel bars, 2.90c., Pittsburgh, taking a freight rate of 27c. per 100 lb.; discard bars, 3.25c., Chicago; common bar iron, 3.50c., Chicago; refined iron bars, 4.25c. to 5c.; rail carbon, 3c., Chicago.

Jobbers quote soft steel bars, 4.17c., bar iron, 4.17c., for ½ in. thick and heavier. Reinforcing bars, 4.29½c. base. Under the new price there is no charge for twisting, but extras for sizes are quoted as per card. Shafting, list plus 13 per cent.

Rails and Track Supplies.—The railroads are showing no interest; in fact, it is understood they have been directed not to buy.

Standard railroad spikes, 3.90c., Pittsburgh. Track bolts, with square nuts, 4.90c., Pittsburgh. Tie plates, steel, 3.25c.; tie plates, iron, 3.75c., f.o.b. maker's mills. The base for light rails is 3c., f.o.b. maker's mill, for 25 to 45-lb. sections, lighter sections taking Government extras.

Bolts and Nuts.—Cancellations have been fewer than in some other lines, but in regard to new business the general tendency to await price developments stands in the way of activity.

Structural rivets, 5.67c.; boiler rivets, 5.77c.; machine bolts up to ⅞ x 4 in., 37½ per cent off; larger sizes 25 and 5 off; carriage bolts up to ⅞ x 6 in., 32½ off; larger sizes, 20 off; box pressed nuts, square, tapped, 78c. off; hexagon tapped, 58c. off; coach or lag screws, gimlet points, square heads, 40 per cent off. Quantity extras for nuts are canceled.

Cast-Iron Pipe.—There are no inquiries, no taking of bids and no awards to report. Some slow months are expected, but no grief is shown over this, as the makers did better this year than they expected to do.

We quote per net ton, f.o.b. Chicago, ex-war tax, as follows: Water pipe, 4-in., $69.80; 6-in. and larger, $66.80; class A and gas pipe, $1 extra.

Wire Products.—Since the cancellation of military barbed wire, some good sized shipments of barbed wire for domestic purposes have been made, but the coming of winter will bring an end to this business. The nail demand has not been proportionate to that for fencing.

Old Material.—In the absence of buying by consumers, except where they take a small lot at a price so low that the offer cannot be resisted, there is no business save that between dealers and brokers who buy to fill old contracts. Therefore quotations are largely nominal, and are seldom in accord with any two views. In general, the brokers are not panicky and are not pressing sales, but here and there one will take what he can get for a lot on hand. With one mill after another saying it is not interested, it is exceedingly difficult, if not impossible, to say just where the prices of some items stand. Conditions must settle before anyone will be pleased. Machine shop turnings have again been bought at $12.50. No one busheling has sold at $24 net, and re-rolling rails have been offered at $30, Marion, Ohio, but this did not interest the mill. The railroad lists are numerous, but not heavy.

We quote for delivery in buyers' yards, Chicago and vicinity, all freight and transfer charges paid, as follows:

Old iron rails	$36.00 to $37.00
Relaying rails	50.00 to 55.00
Old carwheels	27.00 to 28.00
Old steel rails, rerolling	30.00 to 31.00
Old steel rails, less than 5 ft.	30.00 to 31.00
Heavy melting steel	26.00 to 27.00
Frogs, switches and guards, cut apart	26.00 to 27.00
Shoveling steel	26.00 to 27.00
Heavy steel axle turnings	21.00 to 22.00
Per Net Ton	
Iron angles and splice bars	$33.00 to $34.00
Steel angle bars	26.00 to 27.00
Iron arch bars and transoms	39.50 to 40.00
Iron car axles	39.00 to 40.00
Steel car axles	39.00 to 40.00
No. 1 railroad wrought	27.00 to 28.00
No. 2 railroad wrought	26.00 to 27.00
Cut forge	26.00 to 27.00
Tires and flues	21.00 to 22.00
No. 1 busheling	24.00 to 24.50
No. 2 busheling	15.50 to 16.50
Steel knuckles and couplers	30.36
Coil springs	30.36
No. 1 cast scrap	26.00 to 27.00
Boiler punchings	32.59
Locomotive tires, smooth	34.00 to 35.00
Machine-shop turnings	12.50 to 13.00
Cast borings	13.50 to 14.50
Stove plate and light cast scrap	20.00 to 20.50
Grate bars	20.00 to 20.50
Brake shoes	20.00 to 20.50
Railroad malleable	25.00 to 26.00
Agricultural malleable	24.00 to 25.00
Country mixed scrap	16.00 to 17.00

Philadelphia

PHILADELPHIA, Dec. 10.

While awaiting the results of the meeting of American Iron and Steel Institute members in New York Monday and steel manufacturers and Government officials in Washington Wednesday, business has been almost at a standstill. The opinion which prevailed last week that the Government will take no further action as to prices is still adhered to, but it is expected that manufacturers and the Government will, for a time at least, act in greater harmony than in ante-bellum days. Some companies not fully integrated may close their plants for a time rather than reduce quotations, as they have been insisting that they have been operating at a loss. There is a feeling that if some plants curtail operations or close for a time, the readjustment of wages will come about more easily.

The Government has given orders to suspend the shipment of a considerable tonnage of shell steel, but has taken no action in regard to many contracts on which work is continuing, including some work which is as strictly war material as is shell steel.

Pig Iron.—At the recent meeting of the Merchant Pig Iron Distributers' Association a strong determination was expressed not to allow contracts for pig iron to be cancelled without good cause. As blast furnaces faithfully adhered to their contracts in delivering iron sold at low prices, it is felt that the consumers ought now to take the iron which they have bought at Government prices unless there is an excellent reason for not doing so. As to the effort of the English Government to cancel about 100,000 tons of basic bought some months ago, it is expected that some of the furnaces that were allotted a part of the tonnage, especially that going to the South, will be glad to have the iron cancelled, as they prefer to make foundry grades, but it is understood that one Ohio company which took a large part of the tonnage will decline to allow it to be canceled. The only transactions at present are for small tonnages for spot shipment. Inquiry for a round tonnage for Japan is pending. We quote standard grades of iron for delivery in Philadelphia, except low phosphorus grades, for which f.o.b. furnace prices are quoted:

Eastern Pennsylvania No. 1 X	$40.90
Eastern Pennsylvania No. 2 X	39.15
Eastern Pennsylvania No. 2 foundry	37.90
Virginia No. 2 X	41.75
Virginia No. 2 foundry	40.50
Basic	36.90
Gray forge	36.90
Standard low phosphorus (f.o.b. furnace)	54.00
Low phosphorus (copper bearing, f.o.b. furnace)	51.00

Ferroalloys.—No difficulty is experienced in buying ferromanganese at $240, and reports of lower quotations seem to be well founded. We quote 70 per cent ferromanganese at $240 delivered, and 16 to 18 per cent spiegeleisen at $62 f.o.b. furnace.

Coke.—The scarcity of coke is so pronounced that it is believed in some quarters that prices will be advanced Jan. 1, but if there is a general decline in prices of pig iron and semi-finished materials, it is not probable that sellers of coke will be able to advance their prices.

Bar Iron.—No action has yet been taken in regard to the new bar iron schedule, but it is expected that an announcement will be made within a few days making 5c. the price for best refined, 3.50c. the price for common bar iron and a medium price, probably 4.25c., for refined iron.

Old Material.—The market is weak and there is very little activity. It is still difficult to quote prices accurately, and whenever the Government maximum price is quoted in the following table it may be considered nominal. It is not at all probable that that price could be obtained, but in the absence of transactions the quotation is continued. We have made reductions on quotations of heavy melting steel, iron rails and a number of other products. We quote for delivery in Philadelphia and nearby points as follows:

No. 1 heavy melting steel	$26.00 to $27.00
Steel rails, rerolling	34.00
No. 1 low phosphorus, heavy, 0.04 and under	39.00
Low phosphorus, 0.04 and under	36.50
Low phosphorus, 0.06 and under	$32.00 to 34.00
Old iron rails	35.00
Old carwheels	29.00
No. 1 railroad wrought	34.00
No. 1 yard wrought	31.00 to 31.50
Country yard wrought	29.00
No. 1 forge fire	25.00 to 26.00
Bundled skeleton	25.00 to 26.00
No. 1 busheling	29.00 to 30.00
No. 2 busheling	18.00 to 19.00
Turnings (for blast furnace use)	17.00 to 17.50
Machine-shop turnings (for rolling mill use)	18.00
Cast borings (for blast furnace use)	17.00 to 17.50
Cast borings (clean)	18.00
No. 1 cast (for steel plant use)	29.00
No. 1 cast (cupola sizes)	32.50 to 33.50
Grate bars	24.50 to 25.00
Stove plate	24.50 to 25.00
Railroad malleable (for steel plants)	29.00
Railroad malleable (for malleable works)	32.50 to 33.50
Wrought iron and soft steel pipes and tubes (new specifications)	29.50 to 30.50
Ungraded pipe	22.00

Finished Materials.—The agreement on a price of $55 for Bessemer and $57 for open-hearth rails will permit the prompt settlement of accounts long standing for several hundred thousand tons of rails, including a large tonnage sold to the Navy Department, which offered to pay $35 per ton for the rails. The steel companies declined to accept and nothing was paid. Traveling representatives of steel companies report they are being well received by the trade, but that few orders are being booked. While buyers are glad to be relieved of restrictions imposed by the Government during the war, and are figuring on their requirements, they are not yet ready to buy freely and are not being urged to do so by the sellers. The most active material seems

to be bars, of which a considerable tonnage has been booked, being taken principally by jobbers. An inquiry for a considerable tonnage of rails and plates for export to Japan is pending, but it is doubtful whether the inquiry will develop into business.

Birmingham

BIRMINGHAM, ALA., Dec. 9.

Pig Iron.—Somewhat to their surprise, Birmingham furnaces were requested the past week to take on 17,000 additional foundry-iron allocations, most of it for prompt shipment with some extending into 1919. There has been considerable inquiry from Italy, Japan and South America, but very little booking. These inquiries also are for prompt movement. A 1000-ton Japanese order, recently placed, has been withdrawn for some unknown reason. The new allocations almost invariably specify high silicon. A survey of the field shows that operators as a rule are well sold into the first quarter to first half. There is a general tendency to expect withdawal of the Federal price regulations and none appears to object. It seems the consensus of opinion that this would be the best method of promoting business. Consumers have taken less and less to the idea of 1919 contract based on the last Government price, which has been the only kind consented to by the furnacemen. Cancellations have decreased. The hesitancy is said to be decidedly more marked among the small than the large consumers. However, the cast pipe interests, both sanitary and water, are among those who continue to hold aloof. All seem anxious for the turning point. Production continues at about the same rate as heretofore, the principal difficulty being the scarcity of coke. A prominent interest has had a furnace ready for the torch for six weeks, but has been unable to operate for this reason. The Woodward Iron Co. will blow in a fifth stack this week. The general tone of the Southern iron market is firm and confident, justified by the state of order books and the absence of stocks. We quote, per gross ton, f.o.b. Birmingham district furnaces, as follows:

No. 2 foundry and soft	$34.00
Basic	33.00

Cast-Iron Pipe.—There is a decided halt in the water and sanitary pipe trade owing to the cancellation of war orders and the absence of business from the merchant trade. Building trades have not resumed, and municipalities must revise their bond issues before starting on improvements. A 30 per cent production is a fair estimate. Two pipe shops at Anniston, one at Holt and one at Gadsden are down.

Coal and Coke.—The coal output slumped the past week, a production of 322,000 tons being reported as compared to 358,000 tons the preceding week. The influenza, which has reappeared, had much to do with it. Owing to the mild season the deficit is not felt as much as ordinarily would have been the case. Furnaces have difficulty in securing their full quota of coke; foundries are getting enough.

Old Material.—The scrap market continues to decline. Consumers have canceled past-due and undelivered consignments and are buying only when immediate necessity prompts. The sensitiveness of the scrap market was never more convincingly shown. Even at persistently lowered prices, business is lifeless. Dealers are getting in what stock they feel safe in acquiring at reduced price. We quote, per gross ton, f.o.b. Birmingham district yards, as follows:

Old steel axles	$33.00 to $37.00
Old steel rails	22.00 to 23.00
Heavy melting steel	20.00 to 21.00
No. 1 railroad wrought	25.00 to 26.00
No. 1 cast	24.00 to 25.00
Old carwhee's	24.00 to 25.00
Tram carwheels	23.00 to 24.00
Machine-shop turnings	12.00 to 12.50
Cast-iron borings	12.00 to 12.50
Stove plates	20.00 to 21.00

St. Louis

ST. LOUIS, Dec. 9.

Pig Iron.—No buying of consequence has appeared. Buyers believe that prices will be lower, but sellers are of the opinion that they will remain steady or even advance as a result of early pig-iron needs abroad. There has been considerable cancellation of unshipped tonnages and past due quotas, and to a considerable extent the furnace representatives report that their principals are accepting these cancellations in an equable frame of mind because of their expectation of easily getting rid of the material at their own prices. Some furnaces, however, are standing firm on the ground that Governmental requirements have caused the delays in shipments; that it is not their fault and that, therefore, the consumer must take the pig iron. Such cases as these, it is said, are likely to reach the Washington adjustment authorities, particularly where Government work is in any way concerned.

Old Material.—Cancellations and deferments of deliveries have become very numerous, with the result that no one wants to buy, and sellers are unable to find a market for what they may have available. This condition of affairs has been accentuated by railroad lists coming out in greater number and for heavier quantities than for some time. The Government's extensive cancellations are the occasion of the demoralized situation for the most part, although the scrap market had been in an uncertain state long before the armistice was actually signed, the trade having apparently sensed the coming situation. Consumers are even canceling unexpired orders, and one large concern is reported to have canceled all contracts for all classes of material with everybody, irrespective of the time of delivery. Dealers are fighting the sweeping character of some of the cancellations, and unquestionably many of the cases will have to be adjusted by the Governmental authorities. Even larger dealers are bewildered by these conditions. Lists out during the week include 1,200 tons from the Wabash, 1,000 Mobile & Ohio, 1400 Missouri, Kansas & Texas, 1800 Big Four, 3000 Baltimore & Ohio and other tonnages from minor sources. We quote dealers' prices, f. o. b. customers' works, St. Louis industrial district, as follows, these being estimates of value, rather than real prices:

Per Gross Ton

Old iron rails	$33.00 to $33.50
Old steel rails, rerolling	28.50 to 29.00
Old steel rails, less than 3 ft	28.00 to 28.50
Relaying rails, standard sections, subject to inspection	55.00 to 65.00
Old carwheels	28.50 to 29.00
No. 1 railroad heavy melting steel	25.50 to 26.00
Heavy shoveling steel	24.50 to 25.00
Ordinary shoveling steel	24.00 to 24.50
Frogs, switches and guards, cut apart	26.00 to 26.50
Ordinary bundled sheet scrap	17.50 to 18.00
Heavy axle and tire turnings	18.00 to 18.50

Per Net Ton

Iron angle bars	$26.00 to $26.50
Steel angle bars	24.00 to 24.50
Iron car axles	35.00 to 35.50
Steel car axles	33.00 to 33.50
Wrought arch bars and transoms	35.00 to 35.50
No. 1 railroad wrought	25.00 to 25.50
No. 2 railroad wrought	24.00 to 24.50
Railroad springs	24.00 to 24.50
Steel couplers and knuckles	24.00 to 24.50
Locomotive tires, 42 in. and over, smooth inside	26.50 to 27.00
No. 1 dealers' forge	16.00 to 16.50
Cast iron borings	13.50 to 14.00
No. 1 busheling	22.50 to 23.00
No. 1 boilers cut to sheets and rings	15.00 to 15.50
No. 1 cast	22.50 to 23.00
Stove plate and light cast	17.00 to 17.50
Railroad malleable	22.00 to 22.50
Agricultural malleable	18.00 to 18.50
Pipes and flues	17.50 to 18.00
Heavy railroad sheet and tank	16.00 to 16.50
Railroad grate bars	16.00 to 16.50
Machine shop turnings	14.00 to 14.50
Country mixed	16.00 to 16.50
Uncut railroad mixed	17.00 to 17.50
Horseshoes	23.00 to 23.50

Coke.—The market has been quiet. Buyers are not willing to commit themselves, although some producers, especially nearby by-product operators, have available considerable quantities of domestic coke for heating purposes and a little metallurgical coke. A surplus seems to be developing through cancellations of delayed shipments and the holding up of shipments by consumers who do not yet see their way clearly. While there is no immediate tendency toward lower prices, there is a feeling that these will come, though perhaps slowly.

Finished Iron and Steel.—Mills are taking on some business, though they are not actively in the market and are not making large contracts ahead. December is always a dull month, and this is more true this year than usual, because of the uncertainties of the situation. With priorities off, however, there is a freer movement on actual immediate needs, and to that extent the situation is more satisfactory. The warehouses are still busy, but not so far behind on deliveries as they have been. We quote for stock out of warehouse as follows: Soft steel bars, 4.24c.; iron bars, 4.50c.; structural material, 4.34c.; tank plates, 4.59c.; No. 8 sheets, 5.54c.; No. 10 blue annealed sheets, 5.59c.; No. 28 black sheets, cold rolled, one pass, 6.59c.; No. 28 galvanized sheets, black sheet gage, 7.84c.

New York

NEW YORK, Dec. 10.

Pig Iron.—There is some difference of opinion as to the advisability of reducing prices of pig iron Jan. 1, but it is not believed that even a greater reduction than the $3 expected would result in bringing out much business in the near future, and buyers generally are reconciled to a quiet period of indefinite length. However, in spite of the fact that there is almost no buying at the present time, it is evident that consumption continues with little, if any, reduction and requests to hurry shipments are not infrequent, while less is heard about cancellations. We quote prices as follows for tidewater delivery for Northern and Southern grades up to Jan. 1:

No. 1 X, silicon, 2.75 to 3.25	$41.30
No. 2 X, silicon, 2.25 to 2.75	39.55
No. 2 plain, silicon, 1.75 to 2.25	38.30
No. 2 X Virginia, silicon, 2.25 to 2.75	42.95
No. 1 Southern (all rail)	42.95
No. 2 Southern (all rail)	41.70

Finished Iron and Steel.—In most products domestic demand is very light but inquiry for export continues active of which very little has resulted in definite orders. The fact, which has been evident for some time, that prices must, and now are to, come down is the explanation for the dearth of new business. Sentiment as to the future is generally optimistic. While two or even three weeks ago plates for export were selling in moderate lots as high as 4c. to 6c. per lb., offerings have been made by mills in the last week as low as 3.25c., the maximum Government price. In plates and in steel and iron bars there have been fair sales in the past week, but they do not represent new undertakings. There has been a fair demand for steel bars from automobile companies and drop forging concerns. The Standard Steel Car Co. has received an order for 7500 freight cars for railroads in France and it is stated that Russia has reinstated orders for 4000 freight cars previously placed and later canceled; the American Car & Foundry Co. is to build 2600 of these and the Standard Steel Car Co., 1400. The American Locomotive Co. has received orders for five locomotives for export to China and eight locomotives for railroads in Cuba. The same company is also considering inquiries from South American republics. The low bidder for the 23,000 to 24,000 tons of steel for the proposed armor plate plant for the Government at Charleston, W. Va., bids for which were opened Dec. 9, was the American Bridge Co. The Government has awarded to the McClintic-Marshall Co., 1100 tons for five storage buildings at Yorktown, Va., and 300 tons for two trestles and nine small buildings at the same locality, as well as 1900 tons for a storage shed at Norfolk, Va. J. H. Grozier is the low bidder on 450 tons for Government work at the Portsmouth Navy Yard. The Hinkle Iron Co. will furnish the steel, 2000 tons, for the light machinery and electrical shop for the Brooklyn Navy Yard, the general contractor for which is the Lusterbader Construction Co. The Pennsylvania Railroad has awarded 600 tons for two bridges to an unannounced fabricator. We quote mill shipments as follows: Steel bars, 3.17c.; shapes, 3.27c.; plates, 3.52c.; common bar iron, 3.77c., and refined bar iron, 5.27c., all New York. Out-of-store prices are 1c. higher.

Ferroalloys.—The market for manganese alloys continues very inactive, demand consisting of only such small lots as a few consumers find themselves in want of. Carloads or less of ferromanganese have gone at about $240, delivered, and have consisted mostly of resale alloy. One lot of 100 tons of spiegeleisen has been sold at $70, furnace, the analysis running up close to 20 per cent manganese. The export trade in spiegeleisen is reviving with some inquiry reported from South American and other countries. One representative here of a British producer of ferromanganese has received within the last week an import license for over 1000 tons of British ferromanganese to apply on an old contract. The Anaconda Copper Mining Co. has closed its ferromanganese plant at Great Falls, Mont., due to the lack of a ready market. Two of the original five electric furnaces planned were in operation. It is understood these will be turned onto some other product. The 50 per cent ferrosilicon market is unchanged at about $145 to $150 per ton on contract with spot material at $155 to $160 per ton.

Cast-Iron Pipe.—Some inquiries for pipe for export are being sent out by export houses, but no definite information is available as to the countries to which the shipments are to be made and it is doubtful whether the inquiries will result in much business. There is no domestic business of importance in sight, but some large projects are being figured upon for next year by municipalities. Government prices are $67.70, New York, for 6-in. and heavier; $70.70 for 4-in., $77.70 for 3-in., and $1 additional for Class A and gas pipe.

Old Material.—The market is weak and whenever transactions take place lower prices are recorded, but in some cases, as, for example, relaying rails and car axles, no transactions are reported and quotations are nominal. It is expected that following the reduction in the price of pig iron, still further weakness and lower prices in scrap will develop. We quote buying prices of dealers and brokers, per gross ton, New York, as follows:

Heavy melting steel	$22.00 to $23.00
Rerolling rails	28.00 to 29.00
Relaying rails	58.00 to 60.00
Iron and steel car axles	42.00 to 44.00
No. 1 railroad wrought	30.00
No. 1 railroad wrought, cut to not less than 10 in. or over 24 in.	30.00 to 31.00
Wrought iron track scrap	26.50 to 27.50
Forge fire	19.00 to 20.00
No. 1 yard wrought, long	26.50 to 27.50
Light iron	7.00 to 8.00
Cast borings (clean)	13.00 to 14.00
Machine shop turnings	13.00 to 14.00
Mixed borings and turnings	13.00 to 14.00
Iron and steel pipe (1 in. minimum diameter), not under 2 ft. long	23.00 to 24.00
Stove plate	22.00 to 23.00
Locomotive grate bars	22.00 to 23.00
Malleable cast (railroad)	28.00 to 29.00
Old carwheels	25.00 to 26.00

Prices which dealers in New York and Brooklyn are quoting to local foundries, per gross ton, are:

No. 1 machinery cast	$29.00 to $30.00
No. 1 heavy cast (columns, building materials, etc.), cupola size	28.00 to 29.00
No. 1 heavy cast, not cupola size	22.00 to 23.00
No. 1 cast (radiators, cast boilers, etc.)	24.00 to 25.00

The Youngstown Sheet & Tube Co. announces that each of its former employees now in the military service of the nation, estimated to number 1500, will be restored to his former position if he so desires.

Cincinnati

CINCINNATI, Dec. 10—(*By wire*).

Pig Iron.—Everyone is awaiting the decision to be made as to whether maximum prices will be continued after Jan. 1. There is such a diversified opinion on the subject of whether the removal of restrictions will send quotations up or down that it is not practicable to give a general idea as to what effect any lifting of the price ban will have on the situation. On account of the low furnace stocks in all districts that ship to this territory, the opinion is expressed in some circles that if Government regulations are removed, it may result in higher prices, but others look for a reduction. Supporting the latter theory is the quiet offering of some off casts of Southern iron below the present maximum quotations. Shipments are forwarded promptly from nearly all districts, although the output has been reduced to a considerable extent. The allocation program appears to be about at an end and furnaces are better able to distribute metal where needed. Silvery iron producers in southern Ohio are not receiving any large orders for future shipments of material, but proportionately their sales for prompt metal run higher in tonnage than reports from ordinary foundry iron producers indicate to be the case with them. Malleable iron is going forward at a rapid rate to agricultural implement manufacturers, who are said to be on the verge of increasing their present contracts.

Based on freight rates of $3.60 from Birmingham and $1.80 from Ironton, we quote, f.o.b. Cincinnati:

Southern coke, No. 1 f'dry and 1 soft	$38.85
Southern coke, No. 2 f'dry and 2 soft	37.60
Southern coke, No. 3 foundry	37.10
Southern No. 4 foundry	36.85
Southern gray forge	36.60
Ohio silvery, 8 per cent silicon	49.30
Southern Ohio coke, No. 1	37.05
Southern Ohio coke, No. 2	35.80
Southern Ohio coke, No. 3	35.30
Southern Ohio malleable Bessemer	36.30
Basic, Northern	34.80
Standard Southern carwheel	54.60

Finished Material.—Business in all lines is slow and jobbers are only buying to fill immediate requirements. Attention has previously been called to the low stocks held in warehouses, and it is predicted that when anything definite is known as to future prices heavy contracts will be made for replenishment. The mills are shipping some material on orders placed five to six months ago, which they had been unable to get out on account of war work. The jobbers have a little better stock of wire nails and are now able to fill orders promptly. Specifications for steel pipe continue very satisfactory.

The following are local jobbers' prices: Steel bars and small structural shapes, 4.13c. base; large rounds and squares 2 in. and over, 4.23c. base; plates, 4.48c. base; No. 10 blue annealed sheets, 5.48c.; steel bands, 3/16 in. and lighter, 4.98c. base (using the new band list). Reinforcing concrete bars, 4.25½c., and wire nails, $4.23 per keg base.

Coke.—Blast-furnace coke is becoming scarcer. Production has been cut down in the Connellsville district to such an extent that some furnaces depending for their supply on that source have had to bank. No furnaces in southern Ohio have been affected, although complaint as to slow shipments from different districts is noted. The foundries have not suffered for want of fuel, because they are consuming a limited amount and the production of foundry coke is about on a par with present consumption. No contracting of any character is reported. A few odd lots of furnace coke for prompt shipment have changed hands lately, but the total tonnage is small.

Non-ferrous Metal Scrap.—Dealers report the market absolutely stagnant. Transactions are hardly large enough to gage quotations. Heavy copper ranges from 16 to 17c.; crucible copper and copper wire around 17¼c.; red brass, 18c., and block tin pipe, 60c.

Old Material.—As this is inventory season, dealers are paying more attention to getting their records straightened out than to either buying or selling. The demand for foundry scrap has dropped to zero, and there are many requests for cancellation of orders, some of which the dealers feel inclined to accept. The expected demand for scrap from the stove foundries has not yet developed, and predictions are that it will not until after Jan. 1. Prices are weak, and such transactions as have been made within the past few days have been at a low level. The steel mills in the Pittsburgh district seem to be well supplied and are not urging shipments as they were 30 days ago. On the other hand, some hold-up orders from them are reported. The following are buying prices, f.o.b. cars Cincinnati and southern Ohio, in carload lots:

Bundled sheet scrap	$17.00 to $18.00
Old iron rails	28.50 to 29.00
Relaying rails, 50 lb. and up	44.50 to 45.00
Rerolling steel rails	28.50 to 29.00
Heavy melting steel scrap	23.00 to 23.50
Steel rails for melting	23.00 to 23.50
Old carwheels	23.00 to 23.50

Per Net Ton

No. 1 railroad wrought	$22.00 to $22.50
Cast borings	10.50 to 11.00
Steel turnings	11.00 to 11.50
Railroad cast	23.00 to 23.50
No. 1 machinery	25.00 to 25.50
Burnt scrap	16.00 to 16.50
Iron axles	33.00 to 33.50
Locomotive tires (smooth inside)	28.00 to 28.50
Pipes and flues	17.00 to 17.50
Malleable cast	20.00 to 20.50
Railroad tank and sheet	14.00 to 14.50

Cleveland

CLEVELAND, Dec. 10.

Iron Ore.—The ore balance on Lake Erie docks Dec. 1 was larger than on that date any previous year, being 10,376,509 gross tons. This compares with 10,023,743 tons Dec. 1, 1917. Receipts at Lake Erie ports for the season were 47,659,801 tons, compared with 46,757,370 tons in 1917, and shipments from Lake Erie docks for the season were 35,747,256 tons as compared with 34,779,452 tons in the previous year. The shipments of the Steel Corporation fell off about 2,000,000 tons as compared with the previous year. This decrease can doubtless be at least partially attributed to the fact that the corporation's furnaces suffered severely from the fuel shortage last winter. Ore shipments to Buffalo increased about 1,000,000 tons over the previous year, owing to the heavy Eastern demand for Lake Superior ore. Shipments to Conneaut fell off about 2,000,000 tons and those to Fairport about 600,000 tons. These two ports suffered from a car shortage, while Ashtabula, which had a more liberal supply of cars, gained 750,000 tons. Receipts at Lake Erie ports and shipments up to Dec. 1 and balance on docks Dec. 1 were as follows:

Receipts at Lake Erie Ports and Balance on Dock

Port	Receipts, Tons	Shipments, Tons	Tons on Dock Dec. 1, 1918
Buffalo and Tonawanda, including Port Colborne, Ont.	9,025,571	3,996,030	522,622
Erie	1,767,459	1,825,557	429,290
Conneaut	6,650,898	6,156,471	1,703,700
Ashtabula	11,013,848	10,257,126	3,276,719
Fairport	1,853,465	1,783,398	510,855
Cleveland	9,634,238	6,038,111	2,106,181
Lorain	3,483,064	2,264,080	825,284
Huron	1,620,712	1,466,970	602,586
Toledo	2,610,456	1,959,513	395,162
Total Lake Erie	47,659,801	35,747,256	10,376,509
Total, 1917	46,757,370	34,779,452	10,023,743

Receipts at Lake front furnaces located at Lake Erie ports were 9,561,773 tons for the season as compared with 8,711,325 tons in 1917. Receipts at other than lower Lake ports for the season were as follows:

Receipts at Other Ports

	Tons
Detroit	414,956
Indiana Harbor	1,417,373
Gary	3,829,130
South Chicago	6,082,722
Milwaukee	167,284
Boyne City	34,236
East Jordan	32,940
Saulte Ste. Marie, Ont.	218,516
Point Edward, Ont.	271,375
Midland, Ont.	64,587
Parry Sound, Ont.	13,300
Total	13,025,869
Total for 1917	13,133,712

We quote, delivered lower Lake docks, as follows:

old range Bessemer, $6.65; old range non-Bessemer, $6.50; Mesaba Bessemer, $6.40; Mesaba non-Bessemer, $5.75.

Pig Iron.—The consumption of pig iron is slowing down and quite a few requests for suspensions of shipments or for extensions of deliveries are coming to the furnaces. These suspensions, together with 40,000 to 50,000 tons of unshipped basic tonnage, placed with a Cleveland furnace for export to England, further shipments of which have been held up, have caused an easing up in the situation. However, consumers who were unable to secure iron for commercial work during the war are now calling for deliveries and shipments are being made on these old contracts. Furnaces claim that this and other demands are taking up the slack caused by suspensions so that so far they have not been compelled to stock iron. Some of the suspensions of shipment are apparently due to the fact that consumers, when possible, during the war-time rush carried good-sized stocks in their yards, but now, with the easing up of conditions, they desire to reduce these stocks. In spite of the uncertainty regarding prices and price regulation for the first half, quite a little inquiry is coming out, mostly for foundry and malleable iron for first half delivery, and several sales are reported in lots of 400 to 1000 tons. Many consumers are also coming in the market for small lots of iron for prompt shipment. The pig iron committee the week past allocated 17,000 tons of iron—10,000 tons of foundry, 6000 tons of Bessemer and the remainder in other grades. The committee expected that after Dec. 1 it would not be called on to make further allocations, but requests from the Government for allocations are still coming in, and the committee now has several lots aggregating about 25,000 tons to be distributed for Government work. Included in these are 7000 to 8000 tons of foundry iron wanted on the Pacific Coast for the Emergency Fleet Corporation. A lot of 10,000 tons of Bessemer iron recently allocated for Italy has been canceled and in its place a corresponding quantity of foundry iron will be taken. We quote, delivered Cleveland, as follows:

Bessemer	$36.60
Basic	33.40
Northern No. 2 foundry	34.40
Southern No. 2 foundry, silicon, 2.25 to 2.75	40.25
Gray forge	33.40
Low silvery, 8 per cent silicon	49.90
Standard low phosphorus, Valley furnace	53.00

Coke.—Considerable inquiry for by-product blast-furnace coke has reached a Cleveland producer in the past few days, but this interest has no surplus coke. Foundries are well supplied and no new inquiry is coming out for foundry coke.

Bolts, Nuts and Rivets.—Inquiry for bolts and nuts has improved, and a fair export demand has sprung up. Some of this export business is being placed at regular prices. Deliveries are better than they have been for some time. Considerable export inquiry has come out for rivets, mostly from France, on which makers are quoting regular prices. There is practically no new domestic demand. There have been some additional cancellations of small lots but manufacturers are well filled with shipyard orders.

Alloy Steels.—The demand for alloy steels is inactive. Buyers are awaiting this week's developments in respect to future iron and steel prices and Government control. Deliveries have improved materially and mills can now make shipments in two to four weeks. There is some call for small lots for airplane, tractor and truck work, and to a more limited extent from makers of passenger cars. While a heavy tonnage of alloy steel ordered for gun and motor truck work was canceled by the Government, about all this steel that was in process of manufacture when the war ended is being taken. Prices are firm, but it is stated that business has not come out in sufficient volume the last few weeks to determine whether war-time prices which were not under Government control will continue. Mills are charging full extras on cold drawn material. Alloy steel is quoted at 7.50c. for low chrome and 8.25c. to 8.50c. for 3½ per cent nickel.

Old Material.—With practically no buying by consumers and an increase in the amount offered, which has now become plentiful, scrap is decidedly weak and prices on all grades on which there is any activity are lower. Mills are not interested in material at any price and are not expected to come in the market for any considerable tonnage until after the first of the year. Trading between dealers is light. Dealers are offering $27 for heavy melting steel, and other grades are well below the Government maximum. At a meeting of the Central Division of the American Board of Scrap Iron Dealers held in Pittsburgh Dec. 5 it was decided to recommend to the board at its annual meeting that the organization, which was formed for the duration of the war, be continued. The division also voted to recommend the appointment of arbitration committees in various districts. The subject of price regulation was discussed and the general sentiment was in favor of regulation, with a minimum as well as a maximum price. We quote prices at consumers' yards in Cleveland and vicinity as follows:

Steel rails	$26.00 to $27.50
Steel rails, under 3 ft	29.00 to 30.00
Steel rails, rerolling	33.50 to 34.00
Iron rails, nominal	39.00
Iron car axles, nominal	46.50
Steel car axles, nominal	46.50
Heavy melting steel	27.00 to 27.50
Cast borings	17.00 to 17.50
Iron and steel turnings and drillings	17.00 to 17.50
Compressed steel scrap	26.00 to 26.50
No. 1 railroad wrought	32.00 to 33.00
Cast iron car wheels, unbroken, nominal	27.00
Cast iron car wheels, broken, nominal	30.00
Agricultural malleable	22.00 to 23.00
Railroad malleable	32.00 to 33.00
Steel axle turnings	22.00 to 22.50
Light bundle sheet scrap, nominal	22.00 to 22.50
Cast iron scrap	26.00 to 27.00
Cast iron scrap, broken, nominal	30.00
No. 1 busheling	26.75 to 27.00
Railroad grate bars, nominal	23.00 to 24.00
Stove plate, nominal	23.00 to 24.00

Finished Iron and Steel.—The trade is awaiting action by the War Industries Board in regard to future price regulation and possible price reduction. Consequently few orders are being placed and these only for small lots of material for early shipment. However, considerable inquiry is coming out, particularly for steel bars, from consumers who desire to ascertain their ability to secure material. Cancellations have dwindled down to a small volume and many manufacturers are still working on Government orders that have not yet been canceled. The supply of billets and sheet bars, in both open-hearth and Bessemer steel, is now fairly plentiful as a result of the cancellation of shell steel and mills report a fair demand for semi-finished steel, particularly in sheet bars for early shipment. Some sheet mills wish to cover for their first-quarter requirements subject to prices prevailing at the time of deliveries. One Cleveland mill has received additional shell steel orders which will keep it busy for a short time. Small orders are coming from the automobile field, but some hesitancy has been caused in this field by price reductions made by some of the pleasure car manufacturers. New inquiry for plates is light, but some business is coming from boiler manufacturers who are planning to make boilers for stock which they were unable to do when Government restrictions prevailed. An Eastern mill is now quoting boiler plates for January delivery in this territory at the Government price at mill instead of on a Pittsburgh basis as formerly and has sold some tonnage on this basis, which means a slight price advance. The structural situation shows an improvement; the McClintic-Marshall Co., Pittsburgh, has taken 600 tons for a new plant for the Cleveland Copper Products Co. That structural shops are eager for business is indicated by the sharp competition for this work, which is reported to have brought out some low prices. Two other inquiries for 500 tons of steel for factory buildings are pending. The sheet market is quiet, although there is some demand for sheets for early shipment.

Steel bars, 4.07c.; plates, 4.42c.; structural material, 4.17c.; No. 10 blue annealed sheets, 5.42c.; No. 29 black sheets, 6.42c.; No. 28 galvanized sheets, 7.67c.

British Steel Market

New Official Domestic Steel Prices After Feb. 1—Export Prices in Pig Iron

(By Cable)

LONDON, ENGLAND, Dec. 11.

The demand for pig iron is excellent, and there is some steel export demand which is largely for rails and structural and shipbuilding material. Following are the revised official domestic prices for steel applicable after Feb. 1, 1919, per gross ton, net f.o.b. makers' works:

Ship, bridge and tank plates, £14 [£11 10s.].*
Boiler plates, £15 [£12 10s.].
Ship, bridge and tank plates, thin, £16 [£14 10s. to £17 10s.].
Angles and bulb angles, £13 12s. 6d. [£11 2s. 6d.].
Small angles, tees and flats, £16 10s. [£14 to £16].
Beams, £13 12s. 6d. [£11 2s. 6d.].
Rails, 60 lb. per yd. and upward, £13 7s. 6d. [£10 17s. 6d.].
Rounds, squares and hexagons, £14 5s. [£12 10s. to £13].
Small rounds, squares and hexagons, £16 10s. [£15 to £15 10s.].
Blooms, billets and slabs for rolling, £11 12s. 6d. [£10 7s. 6d.].
Blooms, billets and slabs for forging, £12 15s. [£11].
Ingots for rerolling, £9 5s.

*Prices in brackets are the last official control war prices for domestic business effective till Feb. 1.

There is a big demand for tin plates with trade controlled until the end of April, at least. Demand for galvanized sheets is large, quotation being £30 per ton, with the price not controlled.

Export prices on Cleveland Scotch and Welsh hematite pig iron are £8 12s. 6d., with West Coast at £8 17s. 6d. For Cleveland foundry and forge iron the export price is £7 5s., with Cleveland basic iron at £7 10s. The export quotation on bar iron is placed at £20.

In THE IRON AGE of Nov. 28, page 1356, official export prices on steel products were published.

Brier Hill Steel Co.'s New Plate Mill in Operation

The first plates were rolled Monday morning, Dec. 9, by the tandem plate and jobbing mill of the Brier Hill Steel Co., Youngstown, Ohio. There were no ceremonies in connection with the start, which was witnessed by operating officials. The initial output is light stock for the Emergency Fleet Corporation. The 84-in. mill was the first to be operated, installation of the 132-in. mill not being completed. With Jeanette furnace, the third in Brier Hill's battery, which was recently lighted, the plate mill represents an expenditure of about $10,000,000. Construction was begun Aug. 17, 1917. The mill is designed to finish sheared plates up to 120 in. wide and any length up to 80 ft. Slabs will come from the blooming mill about three quarters of a mile distant. When running at full capacity, the new mill is expected to turn out upward of 30,000 tons of sheared plates a month.

The American Bridge Co., Pittsburgh, has acquired a tract of about 120 acres near West Elizabeth for the establishment of a new structural steel works. The property fronts on the Monongahela Division of the Pennsylvania Railroad and adjoins the new marine ways now being constructed by the Jones & Laughlin Steel Co. The plans contemplate the erection of general works, shops, etc., and a housing development for employees.

The Hoosier Rolling Mill Co., Terre Haute, Ind., has let contract to Shrouds, McCormick & Cushman, engineers, Terre Haute, for an addition to its plant that will house two 20-in. mtrchant bar mills.

IRON AND INDUSTRIAL STOCKS

Increasing Strength Displayed—Values Gradually Seeking Higher Levels

NEW YORK, Dec. 10.

Indications have for some time strongly pointed to a growing appreciation of the firm foundation on which security values now stand. Whenever a depressing influence becomes potent it is for but a short time, and an advance then sets in which has only been checked by the regulations imposed on loans to Stock Exchange houses. In the past week these regulations have been materially relaxed and the result is seen in enhanced prices, some industrial stocks showing quite substantial gains as compared with the prices of a week ago.

The range of prices on active iron and industrial stocks from Tuesday of last week to Wednesday of this week was as follows:

Allis-Chalm. com.	27 - 30⅞	Lake Supr. Corp.	17⅝ - 18
Allis Chalm. pf..	82 - 84	Midvale Steel...	44⅝ - 46⅛
Am. Can com...	44¾ - 47⅞	Nat.-Acme	30 - 30⅝
Am. Can pf.....	96¼ - 97	Nat. En. & S. c..	43 - 44⅞
Am. Car & F. c.	83½ - 89½	Nat. En. & S. pf.	91 - 92
Am. Loco. com..	61⅝ - 65	N. Y. Air Brake.	101⅜ - 143
Am. Ship com...	114 - 119½	Pressed Steel c..	66 - 67
Am. Ship pf.....	84¾	Ry. Steel Spg. c..	71⅜ - 76⅜
Am. Steel Fdries.	88½ - 92⅜	Ry. Steel Spg. pf.	103⅜
Bald. Loco. com..	73¾ - 78⅜	Republic com. ..	75 - 78⅜
Beth. Steel com..	64½ - 68¼	Republic pf.	99⅜ - 99⅞
Beth. Stl. Cl. B..	64¼ - 69	Sloss com.	47 - 49
Case (J. I.) pf..	91 - 91½	Superior Steel	38
Chic. Pneu. Tool.	64 - 65	Transue-Williams	38½ - 40⅞
Colo. Fuel	38½ - 41	Un. Alloy Steel..	39 - 39½
Cruc. Steel com..	56 - 61½	U. S. Pipe com...	14 - 15¼
Crucible Steel pf.	89½ - 90¼	U. S. Pipe pf.....	46⅜
Gen. Electric ...	151 - 155¼	U. S. Steel com.	95⅜ - 99⅞
Gt. No. Ore Cert.	31¼ - 32¼	U. S. Steel pf...	111⅜ - 113⅜
Gulf States Steel.	68 - 69¼	Va. I. C. & Coke.	56½ - 58
Int. Har. com...	114 - 115	Westingh. Elec..	43 - 44⅜
Lackaw. Steel...	69¾ - 72		

Dividends

The Allis-Chalmers Mfg. Co., quarterly, 1¾ per cent on the preferred and extra ¾ per cent on account of accumulated dividends, payable Jan. 15.

The American Car & Foundry Co., quarterly, 2 per cent on the common and 1¾ per cent on the preferred, payable Jan. 1.

The American Locomotive Co., quarterly, 1¼ per cent on the common, payable Jan. 3, and 1¾ per cent on the preferred, payable Jan. 21.

The American Steel Foundries, quarterly, 1¾ per cent and extra 1¼ per cent, payable in 4¼ per cent Liberty bonds, all payable Dec. 31.

The Canadian General Electric Co., Ltd., quarterly, 2 per cent, payable Jan. 1.

The Ingersoll-Rand Co., 3 per cent, payable Jan. 1.

The Lackawanna Steel Co., quarterly, 1½ per cent, payable Dec. 31.

The Otis Elevator Co., quarterly, 1¼ per cent on the common and 1¾ per cent on the preferred, payable Jan. 15.

The Wheeling Steel & Iron Co., quarterly, 2 per cent and extra 1 per cent, payable Jan. 1.

The Yale & Towne Mfg. Co., quarterly, 2 per cent, payable Jan. 2.

Brazilian Company to Begin Operations

The Companhia Siderurgica Mineira (The Iron & Steel Mining Co.) will shortly complete its new plant at Sabara, State of Minas Geraes, Brazil, which will be one of the most important of its kind in South America. The company's furnace, which is the largest yet constructed in Brazil, has a capacity of from 25 to 35 tons of ore. In addition to regenerators, and refractory material manufactured in this country under the direction of the engineers of the company, other installations, furnished by the Companhia Mechanica e Importadora de São Paulo (Machinery and Import Co. of São Paulo), include two gas motors of 300 hp., an air-compressor, and a tri-phase dynamo with an alternating current of 200 kw. voltage, which distributes energy among several motors, one fo which, of 150 hp., runs the compressor. There are also various apparatus for purifying the furnace gases.

The company has a large stock of fuel with which to begin immediate operation.

The Utt-Thorne Co., Platteville, Wis., dealer in new and used lead and zinc mining machinery and equipment, has passed into the sole ownership of W. L. Thorne, who will continue the business as before.

ELECTRODES OF CARBON

Growth of British Output—Graphite and Amorphous Carbon Compared

The demand for carbon electrodes for use in electric furnaces in Great Britain had grown so large early in 1917, says J. A. Holden in an article in the London *Iron and Coal Trades Review*, that many furnaces could not be operated because of a shortage in the supply. Until recently operators were dependent upon supplies chiefly from America and Sweden. British enterprise, however, has in this case risen to the occasion, says Mr. Holden, so that amorphous carbon electrodes are now manufactured in large quantities in Great Britain and of a quality superior to many of the imported ones and almost equal to the best American amorphous carbon electrodes.

Graphite electrodes are invariably used in furnaces of large capacity, and to some extent also in small furnaces. Compared with those of amorphous carbon their electrical conductivity is very much higher, amounting to about four times as much. The writer has used Acheson graphite electrodes of 5⅛ in. in diameter to carry a current of 4500 amp., and although the joint became visibly hot, no serious inconvenience was experienced. The use of graphite renders it possible to adopt a light construction for the holders, together with a corresponding light design for the framework of the hoisting gear. As graphite can be easily machined it is possible to use accurately cut screw-joints and avoid an accumulation of stub ends.

Graphite and Amorphous

Although graphite has many advantages, several points can be urged in favor of amorphous carbon. Graphite electrodes have a very low tensile strength, only about one-half of that of amorphous electrodes. In consequence careful manipulation is essential if the number of breakages is to be kept down. Thus in joining it is necessary to have the two electrodes in perfect alignment, and not to screw them very tightly together. With a little practice one quickly learns to make successful joints, and it is not unusual to make a satisfactory job in three or four minutes. The low electrical conductivity of amorphous carbon is a decided advantage, as by reason of their large size the electrodes act as powerful insulators to the furnace roof, the life of which is much longer than when graphite electrodes are used. In the writer's experience the economy in this direction amounts to about 33 per cent of the roof cost.

Paste for Amorphous Electrodes

In contradistinction to graphite electrodes, a paste is necessary for joining amorphous carbon electrodes, for these are difficult to machine. The threads, both in the electrode and on the plug, are made by molding in a die, and are consequently not so accurate as are cut threads. The jointing paste is used to produce intimate contact, for arcing would result if all interstices were not filled with a good conductor. An excellent material for making the paste is the best quality Ceylon plumbago ground extremely fine and mixed with hot anhydrous tar (ordinary gasworks tar is useless) to the consistency of treacle. A suitable jointing paste is marketed by one of the English electrode makers under the name of "Jungo." As the life of an electrode is to a large extent determined by the soundness of the joint, careful attention to this is amply repaid by the results obtained. A preliminary trial is made with several screw plugs, and one which grips the threads is chosen. The paste is next heated to about 90 deg. C. and smeared over the lower half of the plug, which is then screwed home. Before the new electrode is attached the projecting half of the plug is also coated lightly with the hot paste. In order to prevent slipping in the holder, the electrodes are made with a slight taper, and to secure a correct joint the diameter has to be measured beforehand with a pair of calipers.

Damp and wet are a prolific source of cracked electrodes and if the top of an annealing or drying stove can be secured for storage it should be utilized. The electrode consumption has, of course, an important bearing on the cost of production. Some electrodes burn very thin, tapering down to a fine point; they are then said to "point" badly. Such electrodes prove troublesome because they invariably break off, and the delay in removing the fractured pieces causes considerable loss.

Allis-Chalmers Induction Type Motor Driving Continuous Rod Mill

At the Grand Crossing works of the Interstate Iron & Steel Co., Chicago, an electric motor has been installed for driving a Morgan 14-pass continuous rod mill.

The driving motor is an Allis-Chalmers machine of the induction type, rated at 1200 hp., 360 r.p.m., with a capacity for 2000 hp. for ½ hr., and is equipped with a liquid rheostat control of great flexibility and low initial cost and maintenance. The secondary phases are brought out to plate terminals, the resistance between them being lessened by water contact as the speed of motor increases. A small motor circulates the electrolyte around cooling coils.

The flexibility of the drive is a marked feature. As the speed reduction from motor to the main drive shaft of the mill is 4 to 1, a reducing gear stand is employed, the motor being connected to the spindle of this through a breaking shaft 4½ in. in diameter. This shaft is large enough to take the starting torque, and also designed to break in case of excessive strain between the motor and driving system, thus protecting the motor and reducing vibration in the slots of the rotor.

The driven gear runs at 90 r.p.m. and is connected to a crank disk by a steel shaft 19 ft. ½ in. long, 7½ in. in diameter, the long shaft being necessary to take up the whip or torsional strain set up between the 22-ft. flywheel on the main shaft of the mill (which belt-drives the finishing gear trains) and the large 8-ft. diameter driven gear in the reducing gear stand.

The electric equipment was furnished by the Allis-Chalmers Mfg. Co. and the reducing gear stand and shafts by the Morgan Construction Co. In addition to a marked saving in operating costs, the installation has made possible a uniform torque with starting loads as high as 2000 hp. There is no loss of time caused by stops on center and the possibility of flywheel racing is eliminated, as it cannot run above the synchronous speed of the motor. The new drive has been in successful operation for four months.

New Brass and Copper Tube Plant

The United States Copper Products Corporation, Cleveland, will shortly begin the erection of a plant for the manufacture of brass and copper seamless tubes. The company has been organized with a capital stock of $1,500,000, has acquired a 25-acre site at West Seventy-third Street and the Wheeling & Lake Erie Railroad, and plans to place contracts at once for the first unit of its plant that will provide 80,000 sq. ft. of floor space. It is the intention to have the plant in operation about March 1. The equipment is to comprise three electric melting furnaces; a copper refining furnace, for refining scrap, brass and copper for its own use, and about 40 crucibles and a tube mill and three electric traveling cranes. An expenditure of about $600,000 will be made for buildings and equipment, and a capacity of 20 tons per day will be provided in the first unit. No flat products will be manufactured. Orders for the required equipment will be placed shortly.

The officers of the company are as follows: President and general manager, E. I. Heinsohn, formerly president and general manager Cleveland Welding & Mfg. Co.; vice-presidents, E. H. Griffith, president Cleveland Machine & Mfg. Co., and Edward A. Noll, president and manager National Tool Co; secretary, John H. Price; treasurer, R. H. York, president Berkshire Mfg. Co. W. H. Keen, formerly assistant general manager Washington Steel & Ordnance Co., Washington, will be factory manager.

Metal Markets

The Week's Prices

Cents Per Pound for Early Delivery

	Copper, New York		Tin,	Lead		Spelter	
Dec.	Lake	Electrolytic	New York	New York	St. Louis	New York	St. Louis
4	26.00	26.00	70.50	7.05	6.75	8.60	8.25
5	26.00	26.00	71.00	7.05	6.75	8.60	8.25
6	26.00	26.00	71.50	7.05	6.75	8.60	8.25
7	26.00	26.00	....	7.05	6.75	8.60	8.25
9	26.00	26.00	72.00	7.05	6.75	8.60	8.25
10	26.00	26.00	72.00	7.05	6.75	8.60	8.25

NEW YORK, Dec. 10.

Government control still regulates most of the markets. Copper conditions continue unchanged. The intricate situation in the tin market persists. The lead market is still under regulation. Spelter demand is light, with prices largely nominal. Antimony has not changed.

New York

Copper.—Demand is light and very little copper is being sold except for delivery in December, which is going at the fixed price of 26c. Nothing is being sold for delivery beyond Jan. 1. The future of the market depends on a decision of the War Industries Board or on some agreement between this board and the Copper Producers' Committee as to conditions to obtain after Jan. 1. An open market is expected by many and probably a lower price level. The entire matter may be settled in a few days. The Government is taking all the metal it has contracted for. The reported purchase of 10,000,000 lb. by the Italian Government at 26c. per lb. is unconfirmed. We continue to quote the market at 26c., New York, for December delivery.

Tin.—It develops, according to conservative estimates, that there is probably in sight a six months' supply of tin for consumers in the United States. There are probably 20,000 tons in the hands of users who have overstocked and in addition to this there have been about 10,000 to 12,000 tons allocated to the United States Steel Products Co., not all of which, however, has reached this country. For the latter, a price of 72.50c., New York and Chicago, or 71.25c. per lb., Pacific ports, has been fixed. Some of the stocks in consumers' hands has been offered for resale and has sold down to 70c. recently. The fixing of a price has, however, somewhat stabilized this "outside" market so that recent small sales have gone at 72c., which we quote as the market, largely nominal, for Straits and Banca tin. Some resale lots have been withdrawn, but demand has been stimulated slightly by the lifting of the uncertainty when a fixed price was announced.

Lead.—Demand is very poor. The reduction in the price last week has not yet stimulated inquiry. The general market is still in the hands of the Lead Producers' Committee. There are unconfirmed rumors that resale lead is offered in quantity and that some has gone at 6.75c., New York. The agreed price continues at 7.05c., New York, or 6.75c., St. Louis.

Spelter.—In the last week or 10 days a fair tonnage of prime Western has been sold to galvanizers and for export, considerable of it for delivery in the first quarter. The market is now quiet with the quotations about 8.25c., St. Louis, or 8.60c., New York, for early or December delivery with first quarter held at about 8c., St. Louis, or 8.35c., New York.

Antimony.—The market is quiet and unchanged at 8.50c. to 8.75c., New York, duty paid, for wholesale lots for prompt and early delivery.

Aluminum.—Government prices still control the market for No. 1 virgin and for scrap metal at 33c. per lb. for 50-ton lots, at 33.10c. per lb. for 15 to 50-ton lots and at 33.20c. per lb. for 1 to 15-ton lots.

Old Metals.—Consumers are still holding off, and as a result very few transactions take place. Dealers' selling prices are nominally as follows:

	Cents Per Lb.
Copper, heavy and crucible	21.00
Copper, heavy and wire	21.00
Copper, light and bottoms	20.00
Brass, heavy	17.00
Brass, light	14.00
Heavy machine composition	23.00
No. 1 yellow rod brass turnings	14.00
No. 1 red brass or composition turnings	20.00
Lead, heavy	6.00
Lead, tea	5.25
Zinc	6.00

Chicago

DEC. 10.—December is always a quiet month in metals, but this year indications point to greater activity. Business has been confined to small lots wanted promptly, the orders coming largely from Government contractors, who ordered shipments held up and then released them. No other features are evident. Warehouse prices show no change. We quote copper at 26c. for carloads and 27.30c. for part carloads; tin, 75c. to 77c.; lead, nominal at 6.85c. in carloads; 7.35c. per lb. for 1 to 25 tons and 7.60c. per lb. for less than 1 ton; spelter, 8.50c. to 8.62½c.; antimony, 10.50c. to 11c. On old metals we quote copper wire, crucible shapes, 17c.; copper clips, 16.50c.; copper bottoms, 15c.; red brass, 16.50c.; yellow brass, 10.50c.; lead pipe, 4.50c.; zinc, 4.50c.; pewter, No. 1, 30c.; tinfoil, 35c., and block tin, 45c.

St. Louis

DEC. 9.—After a quiet and rather weak market, closing figures to-day were: Carload lots, lead, 6.75c.; spelter, 8.10c. to 8.25c. In less than carload lots, prices were: Lead, 7.50c.; spelter, 9.50c.; tin, 72.50c.; copper, 27.50c.; antimony, 10c. In the Joplin district the weakened tendency in metals softened the ore market as to the quantity bought, but there was little change in price. Top grade zinc blende sold up to $75 per ton, while the second grades went to some extent at $55.67, with still other ore at and below $52.50, basis of 60 per cent metal. Calamine was quiet, and ranged, basis of 40 per cent metal, from $30 to $40. Lead ore was off on the reduction of the Government price, and sold down as low as $90, basis of 80 per cent metal. The averages for the week for the district were: Blende, $59, calamine $35, and lead $90. On miscellaneous scrap metals we quote dealers' buying prices as follows: Light brass, 9c.; heavy yellow brass, 12c.; heavy red brass, 15c.; light copper, 15c.; heavy copper and copper wire, 17c.; pewter, 45c.; tinfoil, 50c.; zinc, 5c.; lead, 5.50c.; tea lead, 4.50c.

Decrease in Steel Corporation Orders

Unfilled orders on the books of the United States Steel Corporation Nov. 30 were 8,124,663 tons, compared with 8,353,293 tons on Oct. 31. This is a decrease of 228,630 tons. A year ago the unfilled orders were 8,897,106 tons. There have been but two increases in orders this year and these were in June and in October. The table below gives the unfilled tonnage for the Steel Corporation at the close of each month beginning with January, 1915.

	1918	1917	1916	1915
January	9,477,853	11,474,054	7,922,767	4,248,571
February	9,288,453	11,576,697	8,568,966	3,845,271
March	9,056,404	11,711,644	9,331,001	4,255,749
April	8,741,882	12,183,083	9,829,551	4,162,244
May	8,337,623	11,886,591	9,937,798	4,264,598
June	8,918,866	11,383,287	9,640,458	4,678,186
July	8,883,801	10,844,164	9,593,592	4,928,540
August	8,759,042	10,407,049	9,660,357	4,908,445
September	8,297,905	9,833,477	9,522,584	5,317,618
October	8,353,293	9,009,675	10,015,260	6,165,452
November	8,124,663	8,897,106	11,058,542	7,189,488
December	....	9,381,718	11,547,286	7,836,220

The United Aircraft Corporation, San Francisco, has filed a schedule showing $35,000 assets and $112,500 liabilities. Among its principal creditors are the American Coin Registry Co., Emeryville; Bodens Automatic Hammer Co., Palo Alto; Fedders Mfg. Co., Buffalo; Harron, Rickard & McCone, San Francisco; Lewis Spring & Axle Co., Detroit, and John A. Roebling's Sons Co.

Prices Finished Iron and Steel, f.o.b. Pittsburgh

Freight rates from Pittsburgh on finished iron and steel products, including wrought iron and steel pipe, with revisions effective Nov. 1, 1918, in carloads, to points named, per 100 lb., are as follows: New York, 27c.; Philadelphia, 24.5c.; Boston, 30c.; Buffalo, 17c.; Cleveland, 17c.; Cincinnati, 23c.; Indianapolis, 25c.; Chicago, 27c.; St. Louis, 34c.; Kansas City, 59c.; St. Paul, 49½c.; Denver, 99c.; Omaha, 59c.; minimum carload, 36,000 lb. to four last named points; New Orleans, 38.5c.; Birmingham, 57.5c.; Pacific Coast, $1.25; minimum carload, 80,000 lb. To the Pacific Coast the rate on steel bars and structural steel is $1.315, minimum carload 40,000 lb.; and $1.25, minimum carload 50,000 lb. On wrought iron and steel pipe the rate from Pittsburgh to Kansas City is 50c. per 100 lb., minimum carload 46,000 lb.; to Omaha, 50c., minimum carload 46,000 lb.; to St. Paul and Minneapolis, 49.5c., minimum carload 46,000 lb.; Denver, 99c., minimum carload 46,000 lb. A 3 per cent transportation tax applies. On iron and steel items not noted above, rates vary somewhat and are given in detail in the regular railroad tariffs.

Structural Material

I-beams, 3 to 15 in.; channels, 3 to 15 in. angles, 3 to 6 in. on one or both legs, ¼ in. thick and over, and zees, structural sizes, 3c.

Wire Products

Wire nails, $3.50 base per keg; galvanized, 1 in. and longer, including large-head barb roofing nails taking an advance over this price of $2, and shorter than 1 in., $2.50. Bright basis wire, $3.35 per 100 lb.; annealed fence wire, Nos. 6 to 9, $3.25; galvanized wire, $3.95; galvanized barb wire and fence staples, $4.35; painted barbed wire, $3.65; polished fence staples, $3.65; cement-coated nails, $3.40 base; these prices being subject to the usual advances for the smaller trade, all f.o.b. Pittsburgh, freight added to point of delivery; terms 60 days net, less 2 per cent off for cash in 10 days. Discounts on woven-wire fencing are 47 per cent off list for carload lots, 46 per cent for 1000-rod lots, and 45 per cent off for small lots, f.o.b. Pittsburgh.

Bolts, Nuts and Rivets

Large structural and ship rivets.....$4.40 base
Large boiler rivets.....$4.50
7/16 in. x 6 in. smaller and shorter rivets..50-10 per cent off list

Machine bolts h.p. nuts, ⅜ in. x 4 in.:
Smaller and shorter, rolled threads....50-10-5 per cent off list
Cut threads.....50-5 per cent off list
Larger and longer sizes.....40-10 per cent off list

Machine bolts, c.p.c. and t. nuts, ⅜ in. x 4 in.:
Smaller and shorter.....40-10 per cent off list
Larger and longer.....35-5 per cent off list

Carriage bolts, ⅜ x 6 in.:
Smaller and shorter, rolled threads.....50-5 per cent off list
Cut threads.....40-10-5 per cent off list
Larger and longer sizes.....40 per cent off list
Lag bolts.....50-10 per cent off list
Plow bolts, Nos. 1, 2, 3.....50 per cent off list
Hot pressed nuts, sq., blank.....2.50c. per lb. off list
Hot pressed nuts, hex., blank.....2.30c. per lb. off list
Hot pressed nuts, sq., tapped.....2.30c. per lb. off list
Hot pressed nuts, hex., tapped.....2.10c. per lb. off list
Cold and t. sq. and hex. nuts, blank....2.25c. per lb. off list
Cold and t. sq. and hex. nuts, tapped....2.00c. per lb. off list

Semi-finished hex. nuts:
⅜ in. and larger.....60-10-10 per cent off list
7/16 in. and smaller.....70-5 per cent off list
Stove bolts.....70-10 per cent off list
Stove bolts.....2½ per cent extra for bulk
Tire bolts.....50-10-5 per cent off list

The above discounts are from present lists now in effect. All prices carry standard extras.

Wire Rods

No. 5 common basic or Bessemer rods to domestic consumers, $57; chain rods, $65; screw, rivet and bolt rods and other rods of that character, $65. Prices on high carbon rods are irregular. They range from $70 to $80, depending on carbons.

Railroad Spikes and Track Bolts

Railroad spikes 9/16 in. x 4½ in. and heavier, per 100 lb., $3.85 in lots of 200 kegs of 200 lb. each, or more; track bolts, $4.90. Boat spikes, $5.25 per 100 lb., f.o.b. Pittsburgh.

Terne Plate

Effective May 21 prices on all sizes of terne plates are as follows: 8-lb. coating, 200 lb., $15 per package; 8-lb. coating, I. C., $15.30; 12-lb. coating, I. C., $17.00; 15-lb. coating, I. C., 20-lb. coating, I. C., $19.60; 25-lb. coating, I. C., 30-lb. coating, I. C., $21.75; 35-lb. coating, I. C., 40-lb. coating, I. C., $24.00 per package, all f.o.b. Pittsburgh, freight added to point of delivery.

Iron and Steel Bars

Steel bars at 2.90c. from mill. Refined iron bars, 5.00c.; common iron bars, 3.50c. in carload and larger lots, f.o.b. mill.

Wrought Pipe

The following discounts are to jobbers for carload lots on the Pittsburgh basing card, as announced Nov. 5 by the Government on steel pipe, those on iron pipe being the same as quoted for some time:

Butt Weld

Steel			Iron		
Inches	Black	Galv.	Inches	Black	Galv.
⅛, ¼ and ⅜	44	17½	⅛ and ¼	23	+4
½	48	33½	⅜	24	+3
¾ to 3	51	37½	½	28	10
			¾ to 1½	33	17

Lap Weld

2	44	31½	1¼	18	3
2½ to 6	47	34½	1½	25	11
7 to 12	44	30½	2	26	12
13 and 14	34½	..	2½ to 6	28	15
15	32	..	7 to 12	25	12

Butt Weld, extra strong, plain ends

⅛, ¼ and ⅜	40	22½	⅛, ¼ and ⅜	22	5
½	45	32½	½	27	14
¾ to 1½	49	36½	¾ to 1½	33	18
2 to 3	50	37½			

Lap Weld, extra strong, plain ends

2	42	30½	1¼	19	4
2½ to 4	45	33½	1½	25	11
4½ to 6	44	32	2	27	14
7 to 8	40	26½	2½ to 4	29	17
9 to 12	35	21½	4½ to 6	28	16
			7 to 8	20	8
			9 to 12	15	3

To the large jobbing trade an additional 5 per cent is allowed over the above discounts, which are subject to the usual variations in weight of 5 per cent. Prices for less than carloads are four (4) points lower basing (higher price) than the above discounts on black and 5½ points on galvanized.

On butt and lap weld sizes of black iron pipe, discounts for less than carload lots to jobbers are seven (7) points lower (higher price) than carload lots, and on butt and lap weld galvanized iron pipe are nine (9) points lower (higher price).

Boiler Tubes

The following are the prices for carload lots, f.o.b. Pittsburgh, announced Nov. 13, as agreed upon by manufacturers and the Government:

Lap Welded Steel		*Charcoal Iron*	
3½ to 4½ in.	34	3½ to 4½ in.	12½
2½ to 3¼ in.	24	3 to 3¼ in.	+5
2¼ in.	17½	2½ to 2⅝ in.	+7½
1¾ to 2 in.	13	2 to 2¼ in.	+22½
		1¾ to 1⅞ in.	+35

Standard Commercial Seamless—Cold Drawn or Hot Rolled

	Per Net Ton		Per Net Ton
1 in.	$340	1¾ in.	$220
1¼ in.	280	2 to 2½ in.	190
1⅜ in.	270	2¾ to 3¾ in.	180
1½ in.	220	4 in.	200
		4½ to 5 in.	220

These prices do not apply to special specifications for locomotive tubes nor to special specifications for tubes for the Navy Department, which will be subject to special negotiation.

Sheets

Makers' price for mill shipments on sheets of United States standard gage in carload and larger lots are as follows:

Blue Annealed—Bessemer	Cents per lb.
No. 8 and heavier	4.20
Nos. 9 and 10	4.25
Nos. 11 and 12	4.30
Nos. 13 and 14	4.35
Nos. 15 and 16	4.45
Box Annealed, One Pass Cold Rolled—Bessemer	
Nos. 17 to 21	4.80
Nos. 22 and 24	4.85
Nos. 25 and 26	4.90
No. 27	4.95
No. 28	5.00
No. 29	5.10
No. 30	5.20
Galvanized Black Sheet Gage—Bessemer	
Nos. 10 and 11	5.25
Nos. 12 and 14	5.35
Nos. 15 and 16	5.50
Nos. 17 to 21	5.65
Nos. 22 and 24	5.80
Nos. 25 and 26	5.95
No. 27	6.10
No. 28	6.25
No. 29	6.50
No. 30	6.75
Tin-Mill Black Plate—Bessemer	
Nos. 15 and 16	4.80
Nos. 17 to 21	4.85
Nos. 22 to 24	4.90
Nos. 25 and 27	4.95
No. 28	5.00
No. 29	5.05
No. 30	5.05
Nos. 30½ and 31	5.10

PERSONAL

Effective Jan. 1, the following changes will be made in the sales organization of the Republic Iron & Steel Co.: C. T. Johnston, general sales manager, will become general agent, with offices at Pittsburgh; W. B. Topping will succeed Mr. Johnston as general sales manager, with offices in Youngstown; D. J. Geary and C. L. McKinley will become assistant general managers of sales; Herbert W. Craig will become manager of sales at Chicago. Mr. Topping is a son of John A. Topping, New York, chairman of the board of directors of the company.

John E. Galvin has been elected president of the Ohio Steel Foundry Co., with general offices at Lima, Ohio. He has been operating vice-president of the company since its establishment in 1907. He was active in the organization of the company, designing and erecting the Lima plant in that year. In 1916, as a personal venture, he built a converter and electric steel foundry at Springfield, Ohio, for the manufacture of small steel castings, later selling it to the Ohio Steel Foundry Co. This is now known as the Springfield works of that company.

Bertram Smith, for the past three years district sales manager of the Detroit district of the Edison Storage Battery Co., has been appointed assistant general sales manager, with headquarters at the main office, Orange, N. J. He has had long experience in the storage battery business, having been active in the sale of lead batteries for many years before the advent of the alkaline storage batteries. George Simons, who has been associated with the company for the past three years, succeeds Mr. Smith in charge of the Detroit district.

C. T. Henderson has resigned as chief engineer of the Submarine Boat Corporation, Port Newark Terminal, Newark, N. J., and has become identified with the Hercules Engineering Corporation (chemical, refrigerating and water-purifying plants), 501 Fifth Avenue, New York, as its chief engineer, also acting as president of the Electrolytic Engineering Corporation at the same address. Prior to his connection with the Submarine Boat Corporation he was general manager of the Niagara Smelting Corporation, Niagara Falls, and prior to that acted in various capacities with the Cutler-Hammer Co.

William Casey, who has been shop manager of the Canadian Locomotive Works, Kingston, Ont., for the past two years, has been appointed general manager of the company. He entered the works as a boy and steadily advanced until he reached his present position.

Edgar J. Reilly, sales manager of the William B. Pollock Co., has returned to Youngstown, Ohio, after spending a month in a hospital in Chicago, recovering from an injury to one of his feet, received in an automobile accident.

F. M. Savelli, sales manager for the Chilean territory of the Federal Export Corporation, New York, recently sailed for Valparaiso, after a visit of several weeks to the home offices at 42 Broadway, New York.

E. W. McDonald, comptroller and assistant secretary of the Truscon Steel Co., Youngstown, Ohio, has been made assistant cashier of the National Bank of Commerce of New York and will assume his new duties Jan. 1. He had been with the Truscon company 12 years. Mr. McDonald will be succeeded by W. J. Davis, who has been his assistant.

John Williams, President, Amalgamated Association of Iron, Steel and Tin Workers, whose headquarters is in Pittsburgh, will resign this position and remove to Seattle, Wash. He has been a national officer of the Association for 22 years, having held the positions of assistant secretary, secretary-treasurer and president.

John C. Spence, superintendent Norton Grinding Co., Worcester, Mass., will address the Bridgeport Section, American Society of Mechanical Engineers, Dec. 18, on "Training Schools," the use of training departments in the industries to teach the principles of American citizenship with respect to property, the use of tools, the care of machinery, and honesty of workmanship.

Edwin L. King has been elected secretary-treasurer of the Pratt & Cady Co., Hartford, Conn. He succeeds to the treasurership of the late Bishop White and retains the position of secretary. Mr. King was formerly of the engineering department of the Travelers Insurance Co. At the same meeting of directors Albert E. Oldroyd was elected assistant treasurer, and O. Lamson Beach, assistant secretary. W. B. Lashar is president, and B. I. Ashmun vice-president and general manager.

J. L. Key, long connected with the iron trade and for the past two years in charge of the purchase of scrap for the Pacific Coast Steel Co., San Francisco, has resigned to take charge of the purchasing of pig, coke and cast-iron scrap for several local foundries. He will open an office Jan. 1 in the Call Building, San Francisco.

Ross H. Wilmot, of the steel sales staff of Joseph T. Ryerson & Son, 30 Church Street, New York, has been placed in charge of the firm's machinery interests in the New York territory.

Frank Purnell, assistant to J. Leonard Replogle, director of steel supply at Washington, will return to the sales department of the Youngstown Sheet & Tube Co., Youngstown, Ohio, Jan. 1. Mr. Purnell was called to Washington 15 months ago and has served in various capacities in the steel section.

Lieut. August E. Bluhm, formerly purchasing agent and second vice-president of the Fred Medart Mfg. Co., St. Louis, was wounded in action Sept. 28. He was wounded just as he took over command of his company, after the captain had been wounded.

Gershom Smith, formerly comptroller of the Pennsylvania Steel Co., and more recently vice-president of the Tabulating Machine Co., after seven months in the office of the Quartermaster General at Washington, has been appointed consulting accountant in the engineering firm of George W. Goethals & Co., Inc., 40 Wall Street, New York.

J. K. Mahaffey, who has been representing the Edison Storage Battery Co. in Washington in connection with Government business, has been appointed district sales manager of the Pittsburgh district. He has been in the employ of the company since 1916. His previous connections include the General Electric Co., Jandus Co., Adams-Bagnall Co., Union Metal Mfg. Co. and Electric Products Co. of Cleveland.

Peter J. Phillips, special representative of the Federal Export Corporation, New York, recently sailed from New York for Colon, Panama. From that point he will begin a tour of the Caribbean region, visiting all the sales offices of the corporation in that district. On this trip, his second to the Caribbean in the past year, Mr. Phillips will spend considerable time in the important markets, investigating trade conditions as they have been altered by the armistice proceedings.

Charles E. Denise, who has been contract engineer in Chicago for the McClintic-Marshall Co. for the past 15 years, has been made sales manager of the company at Pittsburgh. He is succeeded in Chicago by John W. Davis, formerly vice-president and chief engineer of the Joliet Bridge & Iron Co.

L. C. Reynolds, formerly associated with the Oakland Motor Car Co., Pontiac, Mich., has been appointed manager of the motor factory of the General Motors Corporation in Detroit.

A. S. Knowles, consulting engineer of Freyn, Brassert & Co., engineers, Chicago, sailed for France, Nov. 30, on an inspection trip of by-product coke ovens and allied industries. He is expected to return in about six weeks.

Robert S. Alter, vice-president and export manager American Tool Works Co., Cincinnati, has been re-elected president of the Foreign Trade Association of the Cincinnati Chamber of Commerce.

Don Hooven, secretary Hooven, Owens, Rentschler Co., Hamilton, Ohio, has been elected secretary of the American Frog & Switch Co., Hamilton, succeeding M. E. Dempsey, who has retired on account of ill health.

J. R. Pilling, Pilling & Crane, Philadelphia, who had been in the Army, stationed at Camp Jackson, Jacksonville, Fla., has been mustered out and has returned to Philadelphia.

Victor Page, formerly with the New Departure Mfg. Co., Bristol, Conn., has been commissioned a major in the Aviation Corps.

Coke Contracting by Furnacemen

UNIONTOWN, Pa., Dec. 8.—Contracts for coke for the first half of 1919, (and so far no longer contracts have been reported other than those with certain renewal clauses) are now being made. Excluding the H. C. Frick Coke Co.'s production, it is conservatively estimated that not less than 50 per cent of the output of the Connellsville region has been contracted for on the basis of the present Government price of coke or on any future Government price, the contracts providing that deliveries shall be made at the last prevailing Federal price. It is also stated that 25 per cent of the production either has been contracted for or operators have elected to accept the spot price as the months roll on. Contracts for this 25 per cent, where made, provide either for cancellation should the Federal price be abandoned, making new agreements necessary, or for payments on a percentage basis of the price of pig iron—generally about 20 per cent. Thus, if pig iron should retain its present price of around $33, the price of coke would be around $6.60.

The present situation is tempered by the very acute shortage of coke, a number of furnaces already having been compelled to bank temporarily and this condition is expected to act as the great stabilizer of output, shipments and wages during the winter months. Ten days ago there was an inclination in steel centers to scout reports of a shortage of coke from this region. Since then developments have indicated that the shortage is very real, and as a result there has been little difficulty in placing contracts; as a matter of fact, there has been pressure for the making of contracts.

The wage situation is giving the operators real concern at present, for they realize that there must be readjustment in living costs before readjustments of wages to a lower level are possible.

Plans already are in the air for the development of the thousands of acres of coal lands in Greene County as yet untouched. A large increase in the number of by-product ovens in various parts of the country is seen in this region, where it is declared there is little likelihood of any material number of beehive ovens being built. In Fayette County hundreds of beehive ovens have been shut down and the shipments of coal diverted to by-product ovens. New developments in this and Greene County, so far as can be learned here, provide solely for large coal-producing operations with the conversion of the coal into coke to take place at by-product plants.

New Car Plant at Youngstown

YOUNGSTOWN, OHIO, Dec. 11.—William Wilkoff, president Youngstown Steel Car Co., announces plans have been completed for a new car building plant to cost $2,000,000, to have a capacity of 75 cars daily. The company will increase its capitalization from $250,000 to $3,000,000 and employ 2000 men.

The Jarecki Mfg. Co., Erie, Pa., has made arrangements for establishing a large oil-well machinery and supply house at Fort Worth, Tex. It will also put in branch supply houses at Ranger, Cisco, Wichita Falls and Burkburnet.

OBITUARY

WILLIAM H. H. STUBBLEBINE, inventor of the Stubblebine furnace, died at his home in Allentown, Pa., Dec. 6, aged 78 years. He was born in Reading, Pa., saw service in the Civil War, and on his retirement from the army, in 1863, located at Bethlehem, Pa. He became one of the associates of the late John Fritz in developing the activities of the Bethlehem Iron Co., now the Bethlehem Steel Co. In 1866 he was made night superintendent of the plant, holding that position until 1875, when he was appointed superintendent of the merchant department. He retired in 1907. He leaves a son, W. A. Stubblebine, and two daughters.

LIEUT.-COL. ARTHUR E. PIORKOWSKI, retired, of the German army, who came to the United States 30 years ago to have charge of the sale of Krupp products to the American Government, died in New York, Dec. 2, aged 79 years. The Krupps were already represented in the United States when Col. Piorkowski came to this country, but his duties were in connection with other products than those handled by the commercial agency. From 1905 to 1907 Col. Piorkowski sold a considerable tonnage of German-made steel products in the United States, negotiating several transactions in structural steel for the German Steel Works Union.

IRVIN H. PLEUKHARP, vice-president and treasurer Atlas Brass Foundry Co., Columbus, Ohio, died at his home in that city Dec. 1 from influenza. He had been ill only a few days. He leaves a widow and one daughter.

AMBROSE R. GORSLINE, Rochester, N. Y., president Cochrane-Bly Co. and a valued member of the Rochester Machine Industries, died Nov. 25.

JAMES F. HOWIE, general manager Hofius Steel & Equipment Co., Seattle, Wash., died recently in that city, aged 50 years.

F. J. SPOTTEN, general superintendent Cleveland Crane & Engineering Co., Cleveland, died Dec. 4 of epidemic influenza.

JOHN DA COSTA NEWBOLD, president R. S. Newbold & Son Co., Norristown, Pa., died Nov. 26.

President Wilson Accepts Resignation of Director General Schwab

Charles M. Schwab, Director General, Emergency Fleet Corporation, received word by wireless from President Wilson Dec. 7 that his resignation, tendered some time ago, had been accepted. President Wilson, in accepting the resignation, said:

> I accept your resignation only because you wish it, and because I feel I must do so in fairness to you. You have been exceedingly generous in giving your services, and they have been invaluable. Want to thank you very cordially indeed for what you have done. Shall always remember it, as I am sure all your associates in the Government will, as a service of unusual value and distinction.

Mr. Schwab announced that he would return immediately to active participation in the management of the Bethlehem Steel Co. He said that during his nine months as director of the Fleet Corporation he had received the most loyal support from President Wilson and all other officials. "The President," he said, "was especially helpful, carrying out to the letter his promise that he would let me do things in my own way. Mr. Hurley, as President of the Shipping Board, and Mr. Piez, as Vice-President and General Manager of the Fleet Corporation, co-operated in an admirable spirit. So did every other man with whom I was associated in the work of building ships for the nation."

With a better steel supply assured, sheet-mill operations in the Youngstown district have shown appreciable improvement, and for the first time in over a year crews worked full turns each day last week. Schedules will continue to improve, operators state, and maximum output is expected in a week.

War Industries Board and Iron and Steel

(*Continued from page* 1473)

Smith Machine Co. is figuring on a large demand for machine tools in foreign markets, having good orders on hand for all the belligerent countries.

The Situation in Other Industrial Centers

Prospects for industrial development in London, Ont., are bright. The George White & Sons Co. is ready to start full blast on the manufacture of farm machinery as soon as it is possible to secure sufficient supplies of raw material; export trade is being considered, but it is the intention to supply the home market first. The London Concrete Machinery Co. has a number of orders for concrete mixers for South Africa, Australia and New Zealand, and it is the intention of the company to go after business in France and other European countries that were devasted by war.

The Electric Steel & Metals, Welland, Ont., is contemplating the manufacture of mining machinery and related products; unlike many other plants engaged on war work, the company's equipment is admirably adapted for peace needs.

In Nova Scotia the production of munitions has been a declining factor for some months. The Nova Scotia Steel & Coal Co.'s employees now number not much more than half of those employed in 1915 and 1916, and for several months it may be said that the company has been operating on a peace-time basis. Its plant at Trenton, N. S., is particularly adapted for the production of ordinary commercial steel products, and the company is also in a position to turn out large quantities of heavy forgings. At the plant of the Dominion Iron & Steel Co., Sydney, the production of shell steel has for several months been practically discontinued and the steel output has been largely absorbed in the making of steel rails. A continuation of this business is a certainty of the future.

Export Ban Relaxed, but Shipping Is Lacking

WASHINGTON, Dec. 10.—Since the signing of the armistice the War Trade Board has taken important steps to free our foreign commerce from war-time restrictions. But lack of shipping, much of which is still held back by the War Department because of the possible needs of our army abroad and the necessity of using war powers to feed Europe, has delayed a free resumption of foreign trade. The work of the War Trade Board also is to be less secret than in the methods of the past.

During the last week the board removed restrictions upon the import and export of a long list of commodities which during the war were strictly under the ban. The list is growing daily. Plans to transfer the powers of the War Trade Board to some Government department seem unlikely of execution. The opinion is growing in Washington that the War Trade Board will become, by act of Congress, a permanent organization, or that its existence, at least, will cover a period of sufficient duration to place our foreign trade upon a firm basis.

Chairman McCormick would not discuss this point, but stated that the future existence of the board would depend largely upon the result of Food Administrator Hoover's recommendations to Congress based upon a study which he is now making abroad of the general food situation and the needs of Europe. One official intimately acquainted with the shipping and foreign trade situation put it this way:

"I don't see what good will be accomplished by the lifting of embargoes and granting of export licenses if arrangement is not made for cargo space to ship the merchandise which has been accumulating now for months and which is being stored in warehouses throughout the country, waiting to be shipped. Foreign trade is at a standstill in spite of the apparent relaxation of the War Trade Board, and unless something is done to alleviate the situation, American interests will be badly hurt."

For shipments destined for Great Britain, France, Italy or Belgium (exclusive of their colonies), or to any country or colony via these four countries, the board has announced the adoption of a simplified procedure to become immediately effective. Applications for licenses to these countries will no longer be referred to the War Industries Board, but, as in the past, will be referred to the missions of the respective allied countries.

Iron Ore Imports Permitted

Among items recently removed from the restricted export list are included aluminum (all articles containing 10 per cent or more of metallic aluminum), antimony, back lead, brass pipe, bronze, cadmium, chromium ore, cobalt ore, copper pipe, plates, rods, sheets, scrap, tools, tubes and wire, graphite and platinum crucibles, most ferroalloys, graphite, industrial diamonds, pipe and sheet lead, magnesite, magnesium, manganese ore and any metal or ferroalloy derived from it, manganese oxide, nickel, alloys, nickel silver, oil-well drilling implements, machinery and accessories, tungsten, radium, uranium, titanium, pyrites, silverware, zinc, wolframite, vanadium, sewing machines, stoves, ranges, lawn mowers and many other items.

Restrictions previously placed upon the importation of ocean shipments of iron ore, limiting importations to shipments from Cuba and to shipments as ballast from Sweden or Spain, have been modified to permit the issuance of licenses for the importation of calcined spathic iron ore originating in and coming from England when shipped as back-haul cargo.

Items are being removed from the restricted list daily and the only check upon the resumption of exportations at an unprecedented rate is the lack of available shipping. Trade agreements are being made with various countries, some of which are already completed, as in the case of Holland, and some of which will be drawn up as soon as negotiations now under way are completed.

Milwaukee Industrial Reconstruction

MILWAUKEE, Dec. 7.—The reconstruction council created immediately upon the cessation of hostilities by the Milwaukee Association of Commerce to facilitate the reversion of industry from a war to a peace basis has perfected its organization by the selection of nine committees, namely: Manufacturers, finance, labor, jobbers, public affairs, industrial education, conservation, readjustment and building and construction. The metal-working industry is represented on nearly every committee in cognizance of the fact that it outranks all other industries in Milwaukee in importance. Gen. Otto H. Falk, president Allis-Chalmers Mfg. Co., and vice-president Falk Co., has been appointed chairman of the manufacturers' committee, the personnel of which also includes Richard P. Tell, president and general manager National Brake & Electric Co., and Charles N. Turner, Milwaukee Coke & Gas Co. E. J. Kearney, secretary and treasurer Kearney & Trecker Co., is a member of the reconstruction body. The council is co-operating with other public bodies.

In the four weeks that have passed since the close of actual warfare, conditions in Milwaukee have been satisfactory, and without untoward incident. In the metal-working industries the forces of employees have been kept intact, and in only a few shops have working schedules been reduced, and then only by the curtailment of overtime and night operations. One of two workshops established solely for war work, namely, the Briggs Loading Co., manufacturer of hand grenades, ceased operations Dec. 6. The other, the Wisconsin Gun Co., manufacturer of field pieces, is continuing its former schedules.

Committee Appointed to Adjust Contracts at Pittsburgh

PITTSBURGH, Dec. 10—(*By Wire*).—A committee of five men has been appointed to adjust ordnance contracts in the Pittsburgh district. R. M. Dravo, chief of ordnance, is chairman of the committee and other members are Harrison Nesbit, president of the Bank of Pittsburgh; George S. Oliver, regional adviser of War Industries Board; Major H. H. Sovil, assistant to the Chief of Ordnance, and Major J. Frank Drake, finance officer for the ordnance district. Brig. Gen. W. S. Pierce, chief of the General Claims Committee of the War Department arrived in Pittsburgh Monday from Washington to instruct the new board as to the principles on which it will proceed. With this board will rest the decision as to whether a Government contract will be carried out in full or whether production on it will be reduced gradually or terminated at once. Each contract is to be individually considered. In every instance where a contract is canceled, the procedure in affecting a settlement will be as follows:

The contractor will prepare an account of all the items entering into the contract, such as raw materials on hand, the work in progress, the finished articles ready for delivery, and such portions of the cost of new buildings and machinery as may properly be assessed against the contract. This is to be presented in the form of a claim to the district board, which will have it checked up by the Army accountants. The district board will then seek an adjustment with the contractor in conformity with the rules brought here by General Pierce. If this is satisfactory, a recommendation will be sent by the claims board to Washington, and, if approved there, the settlement will be paid at once. The board has the power also, in case of certain conditions which make it imperative that the contractor have money at once for working capital, to make an initial disbursement on the basis of the final settlement.

Slowness of Labor Board Causes Strike at St. Louis

ST. LOUIS, Dec. 10—(*By Wire*).—Thirty-eight hundred men, practically the entire force of the National Enameling & Stamping Co. and Granite City Steel Co., twin plants, struck Saturday midnight. Both sides attribute the strike to the slowness of the War Labor Board in deciding the controversy which began July 1.

George W. Niedringhaus, manager of the steel plant, has been in Washington trying to hurry the decision. The board promised to send adjusters next Friday, but labor leaders could not be induced to withdraw the call for the strike.

Both plants are working on large contracts for mess kits and steel ship plates. The companies gave 20 per cent increase in most departments Aug. 1. Albert Niedringhaus, production manager of the steel company, says the strikers are demanding from 40 to 90 per cent increase. They originally asked 33 per cent. The furnaces are cold first time in years.

Building in Buffalo to Be Resumed

Buffalo, Dec. 10.—Reports from the Bureau of Buildings, Builders' Exchange and contractors in general indicate that with the lifting of all restrictions on building and the cancellation of priority certificates which have come with the signing of the armistice, the building trades will resume work on a large scale and that the coming winter will be a busier one in building lines than for several years past. Many new projects in industrial, commercial and residential building are now taking shape.

Ricketts & Co., Inc., formerly at 80 Maiden Lane, New York, announces that, in order to meet the requirements of its increased business and enlarged staff, it has moved its offices to 280 Madison Avenue. President Pierre de P. Ricketts states that additions to the staff include Charles E. Wagstaffe Bateson, Dr. M. L. Hamlin, T. A. Shegog, formerly assistant professor of chemistry and metallurgy at the Royal College of Science, Dublin.

More Activity of Sheet Mills in Youngstown District

YOUNGSTOWN, OHIO, Dec. 10.—While demand for iron and steel products is not very active, due to the taking of inventories and uncertainty on the part of the buyers as to the future of prices, inquiries continue in steady volume and fairly even operating schedules are being maintained.

Inquiries continue to come from Australia, Japan and the Philippines as well as South America. Export business is hampered by lack of shipping space. With shell steel contracts wiped off the books, steel supply available for other finishing operations has increased in volume.

Carriers have not changed their attitude in refusing to accept iron and steel for export unless definite reservations on ocean vessels have been made.

Indications of improved condition in the sheet industry is found in the fact that the sheet mill plant of the American Sheet & Tin Plate Co., Sharon, Pa., has resumed in full for the first time in nine months. This interest's tin plate plant at Farrell, Pa., started this week on a six-day schedule instead of four. Twenty hot mills are running and ten are idle. It is planned to have all operating by the first of the year.

Extras in Galvanized Sheets

The National Association of Sheet and Tin Plate Manufacturers has adopted the following table of extras on galvanized steel sheets for weights heavier than regular commercial coatings:

EXTRAS BASED ON WEIGHT TEST AND 5C. SPELTER

Gage	Commercial Coatings	1.50 oz. to 1.75 oz. per sq. ft. Per 100 lb.	Over 1.75 to 2.00 oz. per sq. ft. Per 100 lb.	Over 2.00 to 2.25 oz. per sq. ft. Per 100 lb.	Over 2.25 to 2.50 oz. per sq. ft. Per 100 lb.	Over 2.50 to 2.75 oz. per sq. ft. Per 100 lb.
30	Add 0.50	0.40	0.60	0.80	1.00	1.20
29	Add .25	0.40	0.60	0.80	1.00	1.20
28	(C/L quantities) Base	0.40	0.60	0.80	1.00	1.20
27	Deduct 0.15	0.40	0.60	0.80	1.00	1.20
25–26	Deduct 0.30	0.40	0.60	0.80	1.00	1.20
22–24	Deduct 0.45	0.25	0.35	0.45	0.55	0.65
17–21	Deduct 0.60	0.25	0.35	0.45	0.55	0.65
15–16	Deduct 0.75	0.15	0.20	0.25	0.30	0.35
12–14	Deduct 0.90	None	0.20	0.25	0.30	0.35
10–11	Deduct 1.00	None	0.20	0.25	0.30	0.35

FOR ADDITIONAL ADVANCES OF 1C. PER POUND FOR SPELTER

When spelter is 6c. per pound add 20 per cent to extras for coating stipulated.
When spelter is 7c. per pound add 40 per cent to extras for coating stipulated.
When spelter is 8c. per pound add 60 per cent to extras for coating stipulated.
When spelter is 9c. per pound add 80 per cent to extras for coating stipulated.
When spelter is 10c. per pound add 100 per cent to extras for coating stipulated.

WEIGHT TEST

Determination of coating by weight test is usually conducted by weighing a quantity of dry sheets immediately before and promptly after galvanizing, so that the amount of spelter distributed over the total area of the sheets used for the tests can be estimated in terms of per square foot.

SPOT TEST

Determination of coating by spot test is usually conducted by the lead acetate method. It is understood by the galvanizer that the lightest spot on any sheet must not fall below the stipulated minimum called for by the specification.

EXTRAS FOR COATINGS SUBJECT TO SPOT TEST

Twenty-five per cent added to the *gross extra* for the stipulated coating.

PRICE OF SPELTER TO BE USED IN COMPUTING EXTRAS

Use nearest even cent of the f.o.b. St. Louis quotation of the most recent issue of the American Metal Market.

If a range is given, and the minimum of the range is less than the half cent, use the next lower even cent. If the lower figure of the range is even half cent or more, use the next higher even cent. If no range is given and quotation is even half cent, use the next higher even cent.

The United Alloy Steel Corporation, Canton, Ohio, has completed a two story and basement building to be used mainly for office purposes. In it will also be located recreation rooms for women employees, dining rooms, cafeteria and barber shop.

Book Reviews

Elements of Machine Design. By Henry L. Nachman. Pages 245 + VI. Illustrations and diagrams, 279. Published by John Wiley & Sons, Inc., New York. Price $2.

Intended primarily as a class-room textbook on the subject of elementary machine design, this book follows the conventional lines used in many of the same title written since Unwin's "Elements of Machine Design" appeared, differing only in that it is somewhat less pretentious than some.

Taking for granted throughout that the reader has a thorough grounding in machine drawing and elementary mechanics, the opening chapter touches briefly on strength of materials, reviewing the standard definitions and formulæ. Following this come four short chapters under the heading of fastenings, dealing with screw fastenings, riveted joints, keys and cotters, and shrink and force fits. This chapter on shrink and force fits, while brief, is a commendable innovation in this type of book.

The remaining seventeen chapters are included under the heading of "Transmission Machine Parts." Eight of these cover conventional transmission parts as: Shafts and axles, couplings and clutches, journals and bearings, belts and pulleys, friction wheels, toothed gears, rope transmission and chain gearing. Eight more cover a more miscellaneous type of transmission parts as: pipe and cylinders, valves, flywheels, crankshafts, crankpins, and eccentrics, connecting-rods, piston rods, and eccentric rods, pistons, crossheads, and stuffing boxes, hoisting machinery details, and springs. The closing chapter covers briefly and in a purely academic manner the materials of machinery, as iron, steel, and bronze, etc. E. C. R.

Fundamentals of Cost and Profit Calculation. By Robert S. Denham. Pages 124; 5 x 7½ in. Published by Cost Engineer Publishing Co., Cleveland. Price $1.

By way of preface the author, who styles himself a cost engineer, uses a letter from himself to the business man. In it he explains without apology that the facts and recommendations he sets forth are unhampered by "professional ethics" which might prevent his departure from "standard accounting practice." Then the author launches forth into a vigorous discussion, in eight brief chapters, of the philosophy of cost and profit, direct and indirect expenses, selling prices, and profits.

Premising his arguments on statements to the effect that the profit on a product or salable article cannot be greater than 100 per cent with the selling price as a basis, that the cost involves all expenses of production and distribution, that direct expenses are those chargeable to but one beneficiary, while indirect expenses are those chargeable to two or more beneficiaries, the author shows that improper methods of cost accounting will fail to point to unhealthy business conditions before a crash comes.

To one of a questioning turn of mind, this little book will seem to contain too many generalities and not enough concrete reasoning. However, some of these generalities will be found sufficiently radical to prove stimulating to those whose calling has to do with costs and accounting. E. C. R.

Broaches and Broaching. By Ethan Viall. Pages 221 + VIII. Illustrations, 187. Published by McGraw-Hill Book Co., Inc., New York, and for sale by THE IRON AGE book department. Price $2.

Written with the object of bringing together the information available on the subject of broaching, this book compiles data gathered from actual practice in the machine shops of the country, much of which has already been published from time to time in technical journals.

The first two chapters briefly describe broaching tools and broaching machines. The next two give examples, covering a wide range of the application of broaching, of pull broaching work and push broaching work. Then two chapters deal with the design of pull broaches and push broaches. The seventh and concluding chapter covers the making of broaches and should prove of great interest to tool room foremen or others who may find themselves called upon to manufacture broaches of complicated or unusual design.

The book is profusely illustrated with excellent views from actual practice. An appendix gives recommended S. A. E. practice for the dimensions of square broached fittings, six, ten, and four spline fittings, and taper fittings with castle nuts. E. C. R.

"The Internal Gear," issued by the Fellows Gear Shaper Co., Springfield, Vt., treats comprehensively of the design and application of internal gears to reduction gear mechanisms. Comparison is made to show its greater length of tooth contact over gear in mesh with either an external gear or a rack. The resultant advantages carefully developed at considerable length are greater tooth bearing surface, less wear and quieter action. Rules and formulas are given for calculating the tooth elements of internal spur gears, for selecting the cutter and for trimming the teeth. Gear cutters and their principles of operation are described in detail. Graphical analyses are given in a series of effective diagrams for the purpose of establishing the mechanical superiority of the internal gear over other kinds, and the tooth action and slippage of both internal and external types are dealt with. Internal helical gear design is described and valuable tables are given relating to both helical and herringbone gears. The theory and practice of cutting internal gears is given, together with useful comment and several tables, diagrams of valuable data and many illustrations. The final chapter takes up and depicts a variety of applications of the internal gear. The volume is 6 x 9 in., 94 pages, in stiff paper cover, contains in all seven important tables and 53 illustrations, and constitutes a handy and useful addition to the literature pertaining to internal gears.

The character of and the construction of homes by means of stucco built up over a foundation of herringbone rigid metal lath is described and illustrated in a booklet by the General Fireproofing Co., Youngstown, Ohio. It is profusely illustrated in color, showing a great variety of house construction, together with diagrams and close-up illustrations of interesting details of construction.

Dinner to Machine Tool Manufacturers

The Allied Machinery Co. of America gave a dinner at the Harvard Club, New York, Monday evening, Dec. 9, to about 100 manufacturers of machine tools, representing all sections of the country, and there was present also a considerable representation of the staff of the hosts. The speaking, in which prominence was given to foreign trade in machinery, was presided over by J. W. Hook, president Allied Machinery Co., and remarks were made by Frank A. Vanderlip, president National City Bank; G. J. Baldwin, head of the Hog Island shipyard; C. A. Stone, American International Corporation; J. B. Doan, American Tool Works Co., Cincinnati; E. J. Kearney, Kearney & Trecker Co., Milwaukee; R. P. Tinsley, American International Corporation, and Roger P. Redier, Allied Machinery Co. Mr. Redier will go abroad shortly and his first work in Europe will be in connection with the re-establishment of the Belgian agency of the Allied Machinery Co. of America.

New Steel Plant at Erie, Pa.

The Wayne Steel Co., Erie, Pa., has placed a contract with Arthur G. McKee & Co., Cleveland, for the engineering work and construction of its new steel plant. Two 25-ton open-hearth furnaces, four to six gas producers, and charging and other equipment will be installed. The open-hearth building will be about 130 x 200 ft. The company will make small bottom-poured ingots, a portion of which will be consumed by the U. S. Horse Shoe Co., Erie, an affiliated company, adjoining whose works the Wayne plant will be located. The remainder of the product, which will be in both carbon and alloy steel, will be placed on the market.

Machinery Markets and News of the Works

BUYING AT A MINIMUM

Demand Probably Dormant Until 1919

Machine-Tool Manufacturers Begin to Replenish Stocks—Second-Hand Trade Not Large—Machine Tool Builders' Meeting

Important announcements and steps in the solution of problems of national scope primarily affecting the machine-tool industry are anticipated generally from the present session of the National Machine Tool Builders' Association at New York. The matter of cancellations and readjustment, the development of and gage of foreign trade, the timely questions as to probable Governmental attitude on vital aspects of present market conditions are expected to come up before it for enlightenment. Progress in these matters is eagerly awaited.

The gamut from feverish war market conditions to the uneventful peace-time period of nearly complete dullness has been traversed by the machinery trade in the brief course of the armistice. Little if any change is looked for until after the new year. What prospects the post-inventory period has is a matter of keen speculation.

Going business is for a few tools only. Current inquiry, for example, in the Chicago territory, is placed at not over one-third of that prior to the armistice. Cleveland machinery interests, contrary to recent widescattered prophesies, do not anticipate a great deal of business from the automobile field.

A readjustment of foundry operation is being effected in the mid-West without any great curtailment, gray-iron producers changing over rapidly to the production of castings for pleasure vehicles, the heavy cancellation of malleable castings work also being filled by old orders held up by Government priority.

Not a great deal of second-hand machinery is as yet coming on the market. Larger offerings are looked for, however, as plants still engaged on Army and Navy work complete their contracts. The early appearance of any extensive demand for used tools is not indicated any more than for new equipment.

Machine-tool manufacturers are availing themselves of the let-up in new orders to restore their stocks of machines to something like normal proportions. Shipments on stock orders are being made more freely to dealers.

Manufacturing operations for the Imperial Munitions Board of Canada on United States account stopped Dec. 7. On British contracts work will end Dec. 14, and the various companies controlled by the board will be liquidated at once.

The reduction of working forces in war plants throughout the United States is being effected with a minimum of disturbance. One of the very largest munition makers is releasing 8000 workmen, one day's quota reaching nearly 800. This easing in the labor supply is proving a benefit to shop officials who are now, for the first time since war became a business, able to replace the careless and incompetent with skilled workmen.

New York

NEW YORK, Dec. 10.

The purchase of machinery and tools of all descriptions has fallen off to a minimum; and the remainder of December is universally regarded as negligible from the standpoint of probable new equipment orders. What the proverbial post-inventory period from Jan. 1 on may hold for machine tool and crane manufacturers is a moot question, which gives rise to a wide range of speculation. A good miscellanous business is generally forecasted, and upon this basis the more optimistic rest predictions of an early active and sizable trade in machine shop equipment. Estimates of early 1919 market conditions, however, vary largely according to the angle of one's viewpoint. The buyer's argument is that flooding of the market is due at any time with a consequent substantial drop in prices. Sellers and customers not in the market for the time being are equally firm that both demand and prices will hold to existing levels.

The Lehigh Valley Railroad, 143 Liberty Street, New York, has issued a list of about 20 machines for its Ashley terminal in Pennsylvania, as follows:

One 14-in. engine lathe.
Three 24-in. engine lathes.
One 30-in. engine lathe.
One 36-in. engine lathe.
One 6-in. pipe machine.
One No. 4 universal shaper.
One 14-in. shaping machine.
One 5-ft radial drilling machine.
One 48-in. x 48-in. x 12-ft. planer.
One 24-in. boring machine.
One No. 5 milling machine.
One 66-in. horizontal boring machine.
One 18-in. slotter.
One 6-in. Gisholt turret lathe.
One 600-ton hydraulic press.

The Moline Plow Co., Poughkeepsie, N. Y., is in the market for considerable equipment in connection with its program for the production of tractors.

It is reported that the plans for the establishment of a new machine shop at the Charlestown, Mass., Navy Yard, for which an appropriation of $900,000 was set aside, will be carried to completion. About 50 old-type tools have already been withdrawn from the present shop in anticipation of re-equipment.

The second-hand machinery market shows no more strength than that for new tools. There is a disposition to reduce prices on used tools in order to stimulate sales, but the withdrawal of buyers from the market is for the most part complete for the time being and apparently they are not to be tempted into early buying. One lot of about 200 machines, which has been held by Russian interests at a premium over new tools on the ground of quick delivery, is now being put forward for buyers' offers. There is no unusual increase, however, in the number of second-hand tools on the market.

Export business shows no radical change. Manufacturers and dealers are now beset with many kinds of propositions looking to the handling of their lines in foreign countries. In a number of cases the applicants smack of the irresponsible mushroom type that war conditions made numerous. It is known that the War Trade Board is to take a liberal attitude toward export machinery trade. The chief hindrance to be encountered in this direction is liable to be from a shortage of ocean bottoms. Although shipbuilders are in a position now to add the tonnage which in peace times would have constituted the normal growth in world shipping, there remains the question as to what increase in this direction will be recommended by shipping experts to handle a so far unmeasured world traffic.

The various unsatisfied needs of the Pennsylvania Railroad for crane equipment constitute the bulk of what remains of unplaced business before crane builders, outside

of the Navy requirements for Portsmouth, Brooklyn, Mare Island, etc. Two 5-ton 63½-ft. grab bucket ash-handling cranes are the latest addition to the railroad's needs. It is understood that it will not do any further purchasing until after Jan. 1; and that the cranes intended for freight handling in connection with the transport of army supplies, will be scratched. The Bethlehem Steel Co. has canceled three 5-ton cranes and has revised its requisition for one 5-ton to a 10-ton.

The Amsterdam Drop Forging Co., Amsterdam, N. Y., is in the market for tongs for handling square steel from 3 to 5 in. in size used in the process of making drop forgings. D. W. Shuler is in charge.

The Robins Dry Dock & Repair Co., Beard Street, Brooklyn, has completed plans for the erection of a one-story addition to its Erie Basin works, 54 x 123 ft., to cost $24,000.

The Pullman Metal Specialty Co., New York, has been incorporated with a capital of $25,000 to manufacture automobile parts, metal specialties, etc. A. and V. Backer, and M. Zeisler, 3671 Broadway, are the incorporators.

The Universal Rubber Products Co., New York, has been incorporated with a capital of $250,000 to manufacture tires and mechanical rubber goods. L. and G. D. Harrington and E. Renard, 1476 Broadway, are the incorporators.

The Redtop Electric Co., Inc., 8 West Nineteenth Street, New York, manufacturer of electrical equipment, has increased its capital from $500,000 to $575,000.

The Lighthouse Department, United States Government, has awarded a contract to the Harris Structural Steel Co., 1480 Broadway, New York, for the construction of an addition to its machine shop at Tompkinsville, Staten Island, to cost $30,000.

The Victor Water Motor Corporation, New York, has been incorporated with a capital of $25,000 to manufacture hydraulic motors and kindred equipment. A. F. Andrews, A. and V. Prager, 419 West 129th Street, are the incorporators.

The Liberty Steel Products Co., 233 Broadway, New York, has increased its capital to $37,500.

Haber Brothers, Inc., 876 Broadway, manufacturer of toys, metal novelties, etc., has increased its capital from $75,000 to $150,000.

Electrical equipment and ice-manufacturing machinery to cost over $100,000 will be installed by the Lion Brewery, Columbus Avenue and 108th Street, New York, on two floors of its building, to be converted into an ice-making plant. Friedmann, Robertson & Keeler, 90 West Street, are engineers.

The Bureau of Yards and Docks, Washington, has awarded a contract to the Lustbader Construction Co., 103 Park Avenue, New York, for the erection of a new machine shop at the Brooklyn Navy Yard. The structure will be used for light machinery and electrical work. Work has begun on the erection of building D, Flushing Avenue, to cost about $39,000. Construction has also been inaugurated on an addition to the naval air plant at Montauk, L. I., to cost $27,000.

The Remington Typewriter Co., 374 Broadway, New York, has increased its capital from $20,000,000 to $22,000,000.

The Master Optical Co., New York, has been incorporated with a capital of $50,000 to manufacture lens, optical supplies, etc. W. H. Peck, A. A. Potter and A. H. Schnackenberg, 2654 Marion Avenue, Bronx, are the incorporators.

Patriarche & Bell, 215 Pearl Street, New York, iron and steel merchants, have acquired under a long-term lease, with aggregate rental of about $100,000, four two and three-story buildings at Clarkson and West streets, for the establishment of new works. The property covers about 10,000 sq. ft.

The Waterproof Roofing Tile Mfg. Co., Inc., Brooklyn, has been incorporated with a capital of $50,000 to manufacture roofing tile. O. Walter, J. E. and W. P. Schilling, 1196 Hancock Street, Brooklyn, are the incorporators.

The Standard Steel Sections, Inc., 608 East 133d Street, New York, is planning for the construction of a two-story addition, 50 x 200 ft., to cost $25,000.

Brewster & Co., Bridge Plaza, Long Island City, manufacturers of bodies for automobiles, etc., has commenced the erection of two additions to its plant, to cost $35,000 and $8,000 respectively.

The A. Z. Boyd Co., 126 Chambers Street, New York, has been incorporated with a capital of $25,000 to manufacture hardware, tools and machinery. W. A. Van Ness and A. Z. and J. C. Boyd are the incorporators.

The National Chain Co., College Point, L. I., has leased a plant at Tenth Street and Sixth Avenue, College Point, for the manufacture of its specialties.

The Taplex Corporation, 47 West Thirty-fourth Street, New York, manufacturer of stoves, with works at 135 West Third Street, has increased its capital from $[illegible] to $150,000.

The Fred Goat Co., 8 Reade Street, New York, machinery, is considering the erection of a new four-story factory, 85 x 100 ft., at Gold and Johnson streets, Brooklyn. It is understood that plans will be formulated to provide for construction in the spring.

The American Machine & Foundry Co., Fifty-sixth Street and Second Avenue, Brooklyn, manufacturer of machinery, has purchased three three-story brick buildings at 5508-12 Second Avenue, adjoining its present works, for proposed additions.

The Carrie Gyroscopic Corporation, 216 William Street, New York, has leased property at 196-200 Sixth Avenue, and 62-70 West Fourteenth Street, adjoining, comprising about 20,000 sq. ft. of manufacturing space for a new works.

The Todd Shipyards Corporation, 15 Whitehall Street, New York, has received a contract from the Navy Department for the construction of six self-propelled steel barges, about 160 x 25 x 11 ft. The boats will be built at the Tebo Yacht Basin works. The machinery and boilers will be constructed at the plant of the Quintard Iron Works Co., 742 East Twelfth Street.

The Knickerbocker Motors, Inc., 170 Broadway, New York, has awarded a contract to Edgar V. Anderson, 39 Market Street, Poughkeepsie, N. Y., for the construction of a one-story addition to its plant in the Fairview district, Poughkeepsie, 60 x 180 ft., to cost $40,000.

The American Locomotive Co., Schenectady, N. Y., has placed its local plant on a five-day working basis, effective Dec. 2, for an indefinite period. Following the award of a contract by the Railroad Administration for 500 standard locomotives, the bulk of the order will be handled by the local plant, which has an average capacity of five locomotives per day. Other parts of the order will be put through at the Dunkirk, N. Y., Pittsburgh and Richmond, Va., works with the smallest proportion going to the Cooke Works at Paterson, N. J. This latter plant has a capacity of from three to four completed locomotives per week, being the smallest of the different works. The recent report that this order had been canceled has been denied by President Fletcher.

The New York Central Railroad, Grand Central Terminal, New York, has awarded a contract to Henry R. Beebe, Utica City National Bank Building, Utica, N. Y., for the construction of a new one-story car shop, about 40 x 150 ft., at its Terminal Yards, Utica, to cost about $12,000.

The Record Tire & Mfg. Co., Sagaponack, N. Y., has been incorporated with a capital of $50,000 to manufacture tires and other rubber products. J. H. Devereux, J. A. Roberts and G. H. Sharer, 233 Broadway, New York, are the incorporators.

The Franklin County Power Co., Little Falls, N. Y., has been incorporated with a capital of $60,000 to construct a power plant. H. S. Lavery, A. H. McCann and P. S. McCaghey, Little Falls, are the incorporators.

The Perth Amboy Dry Dock Co., foot of Broad Street, Perth Amboy, N. J., has received permission from the State Board of Commerce and Navigation to purchase property on Staten Island Sound for a consideration of $25,000. It is understood that the company will use the site for an extension to its works. W. Parker Runyon is one of the heads of the company.

The Star-Brand Mfg. Co., Audubon, N. J., has been incorporated with a capital of $30,000 to manufacture mill supplies, iron specialties, etc. William Malcolm, J. A. Daly and Frank P. H. Sparmaker, Audubon, are the incorporators.

The War Department, Washington, has abandoned the erection of the proposed addition to the ordnance works at Metuchen, N. J., as well as the construction of the railroad yard and works at Hoboken. Work has also been ordered stopped at the proving grounds, Elizabethport, now in course of construction. Construction is proceeding at the new ordnance plant at Pedricktown and this will be pushed to completion and made permanent. The smokeless powder works of the Government at Washington, N. J., operated by MacArthur Brothers, is reducing its working force and it is understood that the entire plant, comprising about 40 buildings, will close at an early date. The du Pont powder works at Pennsgrove is also reducing its working force. This plant has been giving employment to about 20,000 persons.

The Elizabethtown Water Co., 68 Broad Street, Elizabeth, N. J., is having preliminary plans prepared for the construction of a new pumping plant near Landing Bridge, Milltown, with capacity of about 20,000,000 gal., estimated to cost with equipment $150,000. John W. Whelan is secretary.

The Hydrocarbon Burner Co., Orange, N. J., has been incorporated with a capital of $100,000 to manufacture burners

Heil, Waldman and Frederick Oehl, Orange, are the incorporators.

A number of the industrial plants at Bayonne, N. J., have been affected by the general curtailment plans of the Government on war contracts. Certain orders placed with the Babcock & Wilcox Co., East Third Street, for boilers for warships and merchant vessels have been canceled and the company has reduced its force of employees to a number closely approximating that for normal operations; the plant will be devoted to the manufacture of water tube boilers. The American Radiator Co., East Forty-sixth Street, which has been manufacturing naval guns, is also reducing its operatives, putting into effect an 8-hr. day. Work is being continued on the production of guns, but it is expected to change over to normal operations on regular specialties at an early date. The International Nickel Co., Constable Hook, has been furnishing large quantities of nickel for war service, and with the curtailment of this market the company is planning for operations on a peace basis.

The Snead & Co. Iron Works, foot of Pine Street, Jersey City, N. J., is continuing operations on Government contracts, with employment of about 900 men, and it is understood that orders provide for capacity works for some time to come. The company has been producing gas shells for the War Department.

The Crocker-Wheeler Co., Ampere, N. J., manufacturer of electrical machinery, has filed plans for the erection of an addition to building 8A.

The New Jersey Lamp Co., 4 Paterson Street, Hoboken, N. J., has been organized to manufacture electric lamps. Nathan Wise, 368 Broome Street, New York, heads the company.

The Board of Education, Newark, N. J., has appointed John H. and Wilson C. Ely, Firemen's Building, architects, to prepare plans for the proposed new industrial school on Sussex Avenue. It will be three and four stories, 170 x 225 ft., to cost $400,000, and will be provided with machine shop, foundry, metal-working and other industrial departments.

The Department of Public Improvements, Newark, N. J., Thomas L. Raymond, director, will receive bids until Dec. 19 for five Pitot tubes, with indicating, recording and registering meters and all necessary appurtenances for the Meter Recording Station of the municipal waterworks, Bloomfield Avenue.

The Metakloth Co., Englewood, N. J., manufacturer of metalizing specialties, has increased its capital from $100,000 to $200,000.

Buffalo

BUFFALO, Dec. 9.

The Buffalo Marine Construction Co., foot of South Michigan Street, Buffalo, has filed plans for the construction of two one-story extensions, 28 x 50 ft. and 20 x 85 ft.

The H. G. Trout Co. Iron Works, 226 Ohio Street, Buffalo, has made application to the City Council to occupy property adjoining its works, 18 x 100 ft. on Mackinaw Street, for extensions. The company is operating on Government orders.

The Crosby Co., 183 Pratt Street, Buffalo, will soon commence the erection of a one-story addition, 100 x 125 ft., to its sheet metal-working plant. It will be located on William Street and will cost $12,000.

B. E. Holmes, receiver of the Newton Arms Co., Inc., 74-84 East Jewett Avenue, Buffalo, will sell the plant and equipment of the company, including cartridge works, machinery, jigs, tools, gages, etc.

The Buffalo Specialty Co., 375 Ellicott Street, Buffalo, has completed plans for the erection of a two-story addition, 50 x 112 ft., on Northland Avenue, to cost about $6,500.

Effective Dec. 16, the Curtiss Aeroplane & Motor Co., Buffalo, will close its plant to take an inventory of material and production covering about 26 acres of floor space. It is expected that the works will be closed for about a week or 10 days, when it will immediately resume operations for the completion of army and navy aeroplane contracts. James E. Kepperly is general manager.

The Bridgeford Machine Tool Works, Winton Road North, Rochester, N. Y., is planning for the early occupancy of its new plant, one and two stories, 27 x 158 ft.

The Rochester Washing Machine Corporation, Rochester, has been incorporated with a capital of $75,000 to manufacture washing machines. H. A. Freeman, L. B. McCabe and H. H. Stebbins are the incorporators.

The Seneca River Power Co., Baldwinsville, N. Y., has increased its capital from $50,000 to $100,000 for extensions and improvements in its electric works.

Following a suspension in operations the last week in November for inventory purposes, the H. H. Franklin Mfg. Co., South Geddes Street, Syracuse, N. Y., has resumed production on regular automobile manufacture.

The Smith Wheel Co., Inc., 101 North Geddes Street, Syracuse, N. Y., is operating its plant at capacity for the production of metal wheels. Since the close of the war increased orders have been received for wheels for automobile trucks ranging from 1½ and 2-ton sizes to 5 and 7-ton capacities. The business on hand, it is understood, will keep the plant at full operation for some time to come. Burns L. Smith is president.

Philadelphia

PHILADELPHIA, Dec. 9.

The new extensions to be erected by the John Illingworth Steel Co., Tacony and Lewis streets, Frankford, Philadelphia, will consist of three one-story structures, 102 x 144 ft., 38 x 41 ft. and 27 x 96 ft., to cost $30,000. Irwin & Leighton, 126 North Twelfth Street, are the contractors.

The Somerset Electrical Co., Philadelphia, has been incorporated by Roy L. Crover and associates, with capital of $10,000, to manufacture electrical specialties.

The James H. Billington Co., 113 Chestnut Street, Philadelphia, manufacturer of mill supplies, has filed plans for rebuilding its two-story plant at 1530-45 North Randolph Street, to cost about $7,500.

The American Engineering Co., Aramingo Avenue and Cumberland Street, Philadelphia, manufacturer of iron and steel castings, machine parts, etc., has awarded a contract to the Austin Co. for the erection of a one-story addition, 100 x 150 ft., at Wheatsheaf Lane and Sepviva Street, to cost $38,000.

The War Department, Washington, has ordered the suspension of further construction on the proposed additions to the plant of the Hero Mfg. Co., Gaul and Adams streets, Philadelphia, manufacturer of brass and aluminum products.

The Navy Department, Washington, is planning for an expenditure of $5,000,000 during the coming year for extensions to the shipbuilding plant at the League Island Navy Yard, Philadelphia. The proposed work will include the completion of the new dry dock with construction and repair facilities, at a cost of $1,500,000; machine shop for light work to cost $400,000; pattern shop, $400,000; pipe and copper shop, $400,000; fitting out pier and works for the installation of turrets, guns, armor, etc., $1,000,000; mattress factory, $100,000; storage and handling facilities for steel, iron and lumber work, $400,000, and general yard improvements. Contract has been awarded to the Hughes Foulkrod Co., 1201 Chestnut Street, for the construction of a new crane runway at the yard to cost about $15,000.

The Tom Thumb Carburetor Co., Philadelphia, has been incorporated in Delaware with a capital of $850,000 to manufacture carburetors. E. M. MacFarland, J. Vernon Pimm and F. R. Hansell, Philadelphia, are the incorporators.

The Emergency Fleet Corporation, Philadelphia, is said to be planning for the removal of its local offices, 140 North Broad Street, to recently constructed Government buildings at Washington. It is understood that a working force of about 1500 persons will be established for normal operations.

The Camden Iron Works, Camden, N. J., has filed plans for the erection of a one-story brick foundry, 90 x 127 ft., at Line and Perry streets.

The Perfex Specialty Co., Camden, N. J., has been incorporated with a capital of $100,000 to manufacture metal products. Francis J. Smith, William S. C. Roray and Lewis Clark, Camden, are the incorporators.

Shipyards at Camden and Gloucester City, N. J., continue to increase their working forces and are said to be planning to take on a total of about 3000 men. Both the New York Shipbuilding Co., Camden, and Pusey & Jones, Gloucester City, have work ahead for many months. The latter organization has launched eight vessels for the Government at its Pennsylvania shipyard, and from now on all boats will be finished at the New Jersey yards of the company. The New York Shipbuilding Co. is taking bids for the erection of a new two-story administration building.

The Hutchinson Storage Battery Co., Trenton, N. J., has been incorporated with a capital of $50,000. It will take over the business now being operated under this name at 230 South Warren Street. John E. Hutchinson, Roy Skelley and Herbert F. Backes are the incorporators.

Fire Nov. 29 partially destroyed the plant of the Pennsylvania Tank Car Co., Masury, near Sharon, Pa., with loss, including machinery, estimated at over $100,000.

The Carpenter Steel Co., Reading, Pa., is planning for the immediate construction of a one-story shop, 30 x 40 ft., on the River Road to be used for steel chipping operations. A one-story power plant, 60 x 175 ft., will also be constructed

at a cost of about $110,000. The plant will be steam operated with initial capacity of about 2500 hp.

The Schweyer Electric & Mfg. Co., Easton, Pa., has been incorporated with a capital of $100,000 to manufacture electrical equipment. Alvin H. Butz, Allentown, is treasurer.

Following the termination of the receivership of the Cashman Tool Co., Waynesboro, Pa., the payment of all obligations and the dismissal of C. J. Huff, receiver, the company has been reorganized and is now arranging plans for the operation of the works for the manufacture of tools and iron and steel specialties. The following officers have been elected: J. Raymond Hoy, president; Thomas J. King, vice-president; Adrian J. Grape, Baltimore, Md., secretary and treasurer.

The Erie Railroad Co., Jersey City, N. J., is considering the erection of a new engine terminal at Brockwayville, Pa., to include machine shop, engine shop, power house and other structures.

The Camo Corporation, New Rochelle, N. Y., manufacturer of Camoscope motion picture machinery, is considering the establishment of a new plant at Allentown, Pa. Charles E. Morse is one of the heads of the company.

The Bethlehem Steel Co., Bethlehem, Pa., is arranging for a suspension in capacity production at its Lebanon works. It is understood that the present working force will be materially reduced.

The Sanitary Co. of America, Linfield, Pa., manufacturer of iron and steel castings, piping, tubing, etc., is planning for the construction of a one-story extension, 75 x 125 ft., at East Greenville, Pa., to be used as a molding department.

New England

BOSTON, Dec. 9.

War orders, especially for small hand tools and similar supplies, with a few machine tools, continue to be placed by the Government, but the stream of cancellations flows steadily and may approach soon the flood stages. In some plants the changed conditions are already evident in short time operations, but these are munition plants, as in the case of one in Meriden, Conn., where the release of 600 employees was locally absorbed by other shops. In fact, there are plants at Bristol and Southbridge, Conn., which have lately increased their forces. Many limited service men under furlough in New England shops will probably be mustered out where they are at work and permitted as civilians to continue employment without interruption by the discharge board. To require them to report again at a cantonment would be a great waste of time and money. Reports of influenza from certain sections led to a fear that a repetition of the epidemic was in prospect, but the situation seems well in hand and trouble from this plague not now expected to add its burden to manufacturing trials.

Additions to the munition plant at Hanover, Mass., for the National Fire Works Co., and involving about $75,000, are reported in abeyance.

The Air Reduction Sales Co., New York, will erect oxygen and acetylene buildings, 50 x 100 ft., 40 x 60 ft. and 20 x 40 ft., at Boston, Mass., at a cost of $110,000.

Progress on the construction of a two story, 45 x 180 ft., manufacturing building, to cost $30,000, and a power house, $20,000, one story, 40 x 80 ft., for the Koehler Mfg. Co., Marlboro, Mass., will be shelved during the winter.

The Navy Department is preparing plans for an aero station, $800,000, at Narragansett Bay, R. I.

Work has begun on the factory addition, one story, 65 x 170 ft., for the Graton & Knight Mfg. Co., Worcester, Mass.

Erection has been postponed of the factory, dry kiln and boiler house for the Undertakers' Supply Corporation, Springfield, Mass., to cost $55,000.

Contractors are figuring on a factory addition, $15,000, one story, 40 x 400 ft., owner's name withheld. The architect is W. F. Barlow, North Main Street, Brockton, Mass.

Construction of boiler house, one story, 53 x 69 ft., for the Rockwood Sprinkler Co., Worcester, Mass., has been postponed until spring.

Bids have been received for the two story factory addition, to cost $50,000, for the Aetna Mills Co., Watertown, Mass.

The Leavitt Machine Co., Orange, Mass., has in preparation plans for a one story factory addition, 60 x 140 ft., to cost $10,000. A building, 60 x 100 ft., is under construction.

Plans are being revised for a $50,000 engine house at Hopedale, Conn., for the New York, New Haven & Hartford Railroad Co.

The Morgan Construction Co., Worcester, Mass., has a permit for alterations involving a one-story structure, 44 x 48 ft.

The H. & H. Foundry Co., manufacturer of jobbing castings, Stamford, Conn., is preparing to erect a 400-ft. foundry for the manufacture of gray iron, semi-steel, brass, bronze and aluminum castings. It is planned to put it in operation about March 1. The company is in the market for all kinds of foundry equipment. Nicholas Romaniello is secretary.

Baltimore

BALTIMORE, Dec. 9.

The ending of hostilities has caused a considerable decrease in the amount of construction work planned for this city and vicinity, much of which has been projected for some time but was delayed because of the war.

The Maryland Bolt & Forge Co., formerly the Maryland Bolt Co., Baltimore, has organized with R. Curzon Hoffman, Jr., president; John T. Hill, vice-president; J. W. Hill, secretary; A. E. Rudolph, treasurer, and Malcolm Grant, superintendent. The company has acquired property at Mount Washington, Md., in which it will install machinery.

The Water Department, City Hall, Baltimore, will expend about $100,000 for improvements, including a pump and turbo-generator. Walter E. Lee is engineer.

The A. J. Reach Co., Elkton, Md., will build a 16 x 35-ft. boiler house.

The Dorchester Lumber Co., Badham, S. C., is seeking prices on second-hand 25 to 40-kw. dynamos.

The Woodstock Operating Corporation, Anniston, Ala., contemplates the installation of lifting magnets with electric generating machinery.

Fire Dec. 7 destroyed a number of patterns and machinery, including two new planers, at the plant of the Spedden Shipbuilding Co., Kenwood Avenue and Boston Street, Baltimore.

The Southern Brass Works, Portsmouth, Va., has awarded a contract to John W. Hoffler, 504 Fifth Street, for the construction of a one-story extension, 40 x 67 ft.

The Southern Shipyard Corporation, Newport News, Va., has been incorporated with a capital of $100,000 to manufacture vessels. C. L. Marsilliot, Newport News, and C. A. Bloom, Battery Park, Va., are the principal incorporators.

The United States Buoy Corporation, Newbern, N. C., has been incorporated with a capital of $100,000 to manufacture buoys and similar products. C. S. Wallace, H. P. Whitehurst and C. W. Hodges are the incorporators.

The War Department, Washington, has ordered suspension of work on the erection of the proposed bomb loading works at Delaware City, Del., to be operated by the Marlin-Rockwell Co. Operations have also been curtailed at the large munition works at Hopewell, Va., operated by the E. I. duPont de Nemours Co., and it is said that this plant will be discontinued as a Government enterprise.

The Domestic Electric Equipment Co., Cumberland, Md., has been incorporated under West Virginia laws with a capital of $25,000 to manufacture electric products. The company also proposes to operate at Romney, W. Va. H. C. Sanderson, G. T. Staub, Blair M. Haines, T. F. Martin and C. H. Parlons, all of Romney, are the incorporators.

Pittsburgh

PITTSBURGH, Dec. 9.

The Pennsylvania Railroad, Pittsburgh, is planning for the immediate construction of a one-story machine repair shop, 90 x 100 ft., on Columbus Street near Allegheny Avenue.

The Simplex Mfg. Co., Conneautville, Pa., has been incorporated in Delaware with capital of $[illegible] to manufacture hoists, trucks and allied products. W. L. Thomas and W. Sanders, Conneautville, and James Muir, Pittsburgh, are the incorporators.

The Pittsburgh Mining Machinery Co., First National Bank Building, Pittsburgh, has commenced the erection of a one-story and basement shop, 65 x 80 ft., on Central Street to cost $15,000.

The Webster Springs Water & Electric Light Co., Webster Springs, W. Va., is considering the construction of a new electric light plant.

The Wood Coal Co., Ethel, W. Va., is planning for the construction of a new coal tipple to cost about $40,000.

The Tioga Coal Co., Tioga, W. Va., recently organized is planning for the installation of machinery of electric motors, electrically-operated coal mining and haulage machinery and other apparatus. J. N. Berthy, Jr., is manager.

The Andrews Construction Co., Pittsburgh, is considering the erection of a new one-story shop, 60 x 160 ft., at New Kensington.

The War Department has ordered suspension of work on the construction of the new ordnance and munition manufacturing plant at Croyland, Pa., estimated to cost $2,000,000. Foundations for a number of buildings have been completed.

The box manufacturing plant of Joseph Wasser, Hill district, Pittsburgh, was destroyed by fire Nov. 30 with loss estimated at over $50,000. The plant specialized in cigar boxes and similar containers.

Milwaukee

MILWAUKEE, Dec. 9.

The tone of the machine-tool market is regarded as sound and favorable, with an outlook of much promise and encouragement. Inquiry concerning cancellations is met with the reply that while some have been received, the total business stricken off is far less than had been expected.

Machine tool builders do not look forward to any considerable volume of new business until after Jan. 1. Pending inventory, few requirements are being placed. Inquiries, however, are being received in large numbers and scattering orders are being booked, much of the business coming from the gas engine, motor car and tractor industries. Working forces are practically intact thus far, and it is not believed that there will be any necessity of reduction, save in a tapering off from the extended working schedules of the past year.

Structural fabricators in Milwaukee report business quiet and requirements confined to small lots of shapes, ranging from five to 25 tons needed for repairs and small extensions. Prospects for the new year are considered good.

The Maibohm Motors Co., Racine, Wis., sustained an estimated loss of more than $250,000 by fire of unknown origin, which almost totally destroyed its plant at Fifteenth and Clark streets on Dec. 3. The damage to machinery, stock, materials, etc., will reach $250,000, and on buildings, $50,000, according to estimates made by T. W. Cushing, vice-president. It is the intention of the company to rebuild immediately and reconstruction plans are now being perfected. The Maibohm Motors Co. was organized in February, 1916, with a capital stock of $500,000, to take over the Maibohm Wagon Co., Racine, and manufacture a standard light passenger automobile. H. C. Maibohm is president.

The Wisconsin Motor Mfg. Co., Forty-fourth Avenue and Burnham Street, West Milwaukee, has increased its capital stock from $1,000,000 to $2,000,000 to accommodate the expansion of its facilities and business the past year. The company manufactures automobile, motor truck, airplane and tractor engines. Charles H. John is president and general manager.

The Filer & Stowell Co., Milwaukee, manufacturer of steam engines, sawmill machinery and wood-working equipment, has been granted a permit to build a one-story brick and concrete foundry, 71 x 130 ft., at 219 Becher Street. The value is given as $25,000.

The Simms Foundry Co., Racine, Wis., has awarded contracts for the construction of a brick and steel shop addition, 60 x 80 ft., estimated to cost about $35,000, including machinery and equipment. The project is in charge of Edmund B. Funston & Co., architects, Racine.

The Emenze Metal Products Co., Milwaukee, has been incorporated with a capital stock of $25,000 to manufacture aluminum ware and specialties. The incorporators are Christ H. Thode, Joseph Johnson and Yvard F. Elwood, 303 Majestic Building, Milwaukee.

The West Side Sheet Metal & Furnace Works, 2451 Walnut Street, Milwaukee, has passed into the sole ownership of John Scholtz, who purchased the interest of Nicholas Yompel and will continue the business.

The Rosenthal Corn Husker Co., 7403 Greenfield Avenue, West Allis, Milwaukee, will build a $25,000 machine and assembling shop addition early in the spring and is obtaining estimates on the machine-tool and other equipment. August Rosenthal is general manager.

The Factory Supply Co., Marshfield, Wis., has been incorporated with a capital stock of $10,000 to manufacture machine tools, factory equipment and agricultural machinery.

The Burger Boat Co., Manitowoc, Wis., resumed operation in its shipbuilding and repair plant on Dec. 2, after being closed for a week to readjust its Government contracts. Two of four boats ordered by the Government will be completed and other details of the contract will be settled later. All employees have resumed work and the force will be enlarged as rapidly as skilled labor becomes available.

The Menningen & Karth Machinery Co., 7503 National Avenue, West Allis, will begin work about March 1 on a one-story brick and mill machine shop extension, 60 x 80 ft., and will purchase some additional equipment for manufacturing hardware specialties.

The Gilbert Paper Co., Menasha, Wis., has awarded a contract to C. R. Meyer & Sons Co., Oshkosh, Wis., for the erection of a mill and power plant addition, 97 x 100 ft., with a 150-ft. brick stack.

The Oshkosh Washing Machine Co., Oshkosh, Wis., is preparing to enlarge its plant and facilities to handle a five-year contract calling for a maximum of 1800 washing machines per month. The present capacity is 300. M. C. Braham is president.

The Benson Electric Co., Superior, Wis., has taken a large Government contract to manufacture electric steering and signal systems and devices for the Emergency Fleet Corporation. This is the fourth contract received by the Benson company and is of such magnitude that it will require an increase of 50 to 75 per cent in capacity. Another story will be added to the main shop at once. M. B. Benson is president.

The Reliance Motor Truck Co., Appleton, Wis., which has been handling war work in its plant since it was completed about three months ago, expects to begin quantity production of motor trucks and truck axles on Jan. 1. Materials and parts are now being received and the working force is devoting its time to the preparation of tools, dies, jigs, etc. Ira L. Miller is president.

The Common Council, Janesville, Wis., has engaged J. C. Jacobsen, consulting engineer, 1135 First National-Soo Building, Minneapolis, Minn., to prepare tentative sketches and estimates of enlargement of the municipal hydroelectric generating plant and the auxiliary steam generating system. C. V. Kerch is city engineer.

Stockholders of the Falls Motors Corporation, Sheboygan Falls, Wis., at the annual meeting elected the following officers and directors: President, E. J. Lonn, LaPorte, Ind.; first vice-president, P. A. Waller, Kewanee, Ill.; second vice-president, L. G. Blessing, Chicago; general manager, G. G. Brandenburg, Chicago; directors, H. W. Ladish, C. Testwuide and William Wilms. Mr. Lonn is also president of the Great Western Mfg. Co., LaPorte. Mr. Waller has been a director in the corporation since its formation. Mr. Blessing is a member of the Bastion & Blessing Co., Chicago and Muskegon, Mich. Mr. Brandenburg for five years was connected with the Buda Co., Harvey, Ill. The Falls company on Jan. 1 will begin operations in a factory addition, erected and equipped at a cost of more than $275,000. It will manufacture tractor power units in addition to passenger and motor truck engines.

The Madison-Kipp Lubricator Co., Madison, Wis., manufacturer of oiling systems, on Dec. 2 reduced its working force temporarily and issued the following statement: "Present business conditions have made necessary the temporary curtailment of the working force. The apparent uncertainty that is felt by the public as to future industrial conditions makes an interpretation of this move by the company desirable. We believe that the situation is in every sense natural. The signing of the armistice is only a contributing factor to the slackening demand, and is coupled with our normal slack season. In all probability January will offer an opportunity to gradually restore the working force, and by April conditions should permit full production to take care of a greater force and the Madison-Kipp men returning from service. We are continuing to maintain a force of men as great in number as possible, consistent with a safe business policy."

Chicago

CHICAGO, Dec. 9.

In the opinion of one machine tool interest present inquiry represents 30 to 33 per cent of that which prevailed prior to the signing of the armistice. A more extensive resumé of conditions existent in this section is given elsewhere in this issue.

In November, building operations in Chicago reached the lowest point in volume and money involved in any similar period in nearly 20 years. Permits were issued in that month for only 76 buildings, involving an estimated cost of $1,223,400 as compared with 392 buildings having a valuation of $4,740,100 in the corresponding period a year ago. The figures of last month represent low ebb under Government restrictions. Now that these have been lifted there will be a steady betterment, but in all probability a gradual one, until the cost of building material comes down.

The Austin Co., room 1374, southwest corner LaSalle and Adams streets, Chicago, has been awarded the entire contract for a one-story machine shop, 120 x 260 ft., Bay City, Mich., for the Industrial Works. It will be of steel and concrete construction with brick exterior and cost about $100,000. The foundation work is in progress.

The general contract for a factory addition to the plant of the O'Malley Beare Valve Co., 255 East Ninety-fifth

Street, Chicago, has been awarded to the Foundation Co., 209 South LaSalle Street. It is to be of concrete and will cost $130,000.

C. Rasmussen, 154 West Randolph Street, Chicago, has been awarded the entire contract for a one-story boiler house, 41 x 60 ft., for the Herman Loesher Co., leather manufacturer, 2022 and 2024 Mendell Street. The cost will be $15,000.

Gardner & Lindberg, consulting engineers, 140 South Dearborn Street, Chicago, will take bids shortly for the heating system and plumbing in connection with the $1,000,000 packing plant to be built at the Union Stock Yards, Sioux City, Iowa, for the Midland Packing Co.

The Packers' Architectural & Engineering Co., 451 South Dearborn Street, Chicago, is the designer of a $500,000 packing plant to be erected at 1400 and 1426 West Forty-sixth Street, for the Consumers Packing Co., 11 South LaSalle Street. The entire contract has been placed with the Salamon-Waterton Co., 343 South Dearborn Street, and includes refrigerator, cold storage and power buildings with all the appurtenances.

A permit has been issued to the Edison Electric Appliance Co., 5660 West Taylor Street, Chicago, for a one-story factory, 101 x 147 ft., to cost $40,000.

Edward A. Pridmore, president International Molding Machine Co., 2614 West 16th Street, has been granted a permit for the construction of a small addition to the plant to cost $2,750.

The Mead Cycle Co., Chicago, has leased a six-story and basement building, 168 to 172 North Clinton Street, 60 x 150 ft., for a period of 10 years, which it will use in part for a manufacturing building.

The Edward Katzinger Co., manufacturer of bakers' pans and supplies, has purchased a plot, 90 x 150 ft., at the northeast corner of Washington and Sangamon streets, on which it will erect a seven-story factory to cost about $250,000 to be used as an extension.

The American Car & Foundry Co., 2289 South Paulina Street, Chicago, has filed plans for the erection of a new one-story engine plant.

The Baltimore & Ohio Railroad, Grand Central Station, Chicago, has taken out a permit to build a new boiler house on Burley Avenue.

The Finkek Brothers Co., Cortland Street, Chicago, will build a one-story addition to its foundry on Kingsbury Street, to cost about $10,000.

The H. W. Clark Co., Mattoon, Ill., is rebuilding its two-story foundry and metal works at a cost of about $50,000.

The American Wire & Cable Co., Twenty-first and Morgan streets, Chicago, will build a one-story addition, 25 x 115 ft., to cost $8,000.

Detroit

DETROIT, Dec. 9

Automobile manufacturers are resuming pleasure car production as rapidly as materials can be secured. The transition to a peace basis is beginning to stimulate the machine-tool market, which has been slack since the signing of the armistice.

The Ford Motor Co., which was on 100 per cent war work, is now making 1000 pleasure cars per day, and within a few months expects to be back on a normal basis. The program for the coming year calls for the production of 1,000,000 cars, of which three-fourths will be made in Detroit. Within two years the company expects to be on a 1,500,000 production basis. Dodge Brothers, Detroit, are producing nearly 300 cars per day.

The Michigan Copper & Brass Co., Detroit, will build an addition to cost $18,000.

The Standard Motor Truck Co., Detroit, will erect an addition costing $30,000.

The States Engineering Co., Detroit, will erect an addition to cost $5,000.

Other Detroit concerns which will extend their works are: Chalkis Mfg. Co., two story addition; Michigan Pattern & Machine Co., two story addition; General Aluminum & Brass Mfg. Co., additions.

The following directors have been elected by the Wolverine Tractor Co., Detroit: W. J. Wickles, Arnold Boutel, W. E. Laur, Saginaw; C. A. Begelow, Bay City; W. E. Wood, W. G. Wagenhals, W. F. Austin, Detroit. The capital stock is $300,000, of which $175,000 has been subscribed.

The National Bronze & Aluminum Castings Co., Detroit, has moved into larger quarters at 974-980 Garfield Avenue. The new plant will enable the company to care for its greatly increased volume of business.

The General Screw Products Co., Detroit, has been formed with a capital stock of $20,000, all paid in cash. The incorporators are Floyd Y. Heir, Gustave J. Maertens, Oscar Ruffelaere and Stanley and John Imerman.

The Perfection Gauge Co., Detroit, has been incorporated by William R. Farrand, Leo M. Butzel and Nicholas J. Fleming. The company has a capital stock of $100,000, all paid in property.

The Detroit Auto Specialties Co., Detroit, has increased its capital stock from $75,000 to $250,000.

The Page Steel & Wire Co.'s new plant, Adrian, Mich., is being rushed to completion. The structure will be used mainly for metal storage. The adjacent building, which formerly housed the windshield department, will be used for converting the iron into the finished product.

The Michigan Press Co., Ypsilanti, Mich., has purchased the foundry of the Plymouth Motor Castings Co., Plymouth. It is expected that its full capacity, from 200 to 250 motor castings per day, will be contracted for within the next 30 days.

The Parish Mfg. Co., Reading, Pa., manufacturer of automobile axles and parts, has had plans prepared for the erection of a one story heat treatment building, 93 x 150 ft., at its Detroit plant, Mount Elliott Avenue. The structure is estimated to cost $50,000.

The Central Forge Co., Euclid Avenue, Detroit, is planning for the early resumption of construction on the extension to its forge shop and heat treatment building, foundations for which have been completed. The addition is estimated to cost $200,000.

The Packard Motor Car Co., Detroit, has commenced the construction of a one story top addition to its seven story building at Harper and Strong avenues, to cost $75,000, to be used as an enameling department. Plans have been prepared for the erection of a one story building, L-shaped, with wings about 60 x 385 ft., at Harper and Concord avenues, to cost $75,000.

The Industrial Works, Bay City, Mich., manufacturer of cranes, etc., has broken ground for the erection of a one story machine shop, 120 x 260 ft., to cost $125,000. The Austin Co., Chicago, is the contractor.

The Standard Motor Truck Co., Bellevue Avenue, Detroit, is planning for the erection of a two-story factory, 66 x 165 ft., to cost $35,000.

Cleveland

CLEVELAND, Dec. 9

The machinery market continues very dull and the trade looks for little if any change until after the holidays. A few single tools are moving, orders coming mostly from small machine shops. One inquiry from a tractor manufacturer for six standard machines stands out quite prominently, as it is about the only single inquiry for more than one toll. While the automobile industry is inclined to get back into its regular lines as rapidly as possible, the machinery trade does not look for a great deal of business from this source. It is pointed out that even were automobile manufacturers unable to use for their regular production any of the new equipment they added the past few months, their plants were pretty well equipped for a season's production of automobiles before they changed over to Government work. Not a great deal of second-hand machinery is as yet coming on the market, but this is expected to increase as manufacturers still working on Government orders complete their contracts. With the falling off in the volume of new orders some local machine tool manufacturers so far have curtailed plant operations to a very limited extent. They will now build machines for stock which they were unable to do during the war-time rush.

A readjustment is taking place in the local foundry trade and few plants have been compelled to curtail production to any great extent. Gray iron foundries making a specialty of castings for the automobile trade are changing over rapidly to production of castings for pleasure automobiles and a great deal of business is coming out from that source. It is stated that automobile builders are not placing quite as large orders as usual, but that they want immediate production at about the rate before the curtailment caused by the war. Cancellations of malleable castings have been quite heavy but foundries are now filling old orders that were held up when the plants were turned over entirely to Government work. A great deal of new inquiry is coming out, largely from the motor truck field.

The Lang Body Co., 610 Garfield Building, Cleveland, contemplates the erection of a plant at 3088 West 110th Street, Cleveland.

The Champion Machine & Forging Co., 3695 East Seventy-eighth Street, Cleveland, has taken out a permit for an addition to its forge shop, 54 x 100 ft.

The Chisholm & Moore Mfg. Co., Cleveland, will erect a one-story building, 24 x 56 ft.

The Cornwall Mfg. Co., Cleveland, will erect an addition, 21 x 63 ft.

The Cleveland Welding & Mfg. Co., West 117th Street, Cleveland, will erect a power house 80 x 100 ft. The contract has been placed with the Hunkin-Conkey Construction Co.

The East Liverpool Foundry Co., East Liverpool, Ohio, will move its plant to Jeannette, Pa., where it will have larger quarters. The company makes a specialty of building mine cars.

The Dust Recovering Conveying Co., Cleveland, has leased a building at 1710 Woodland Avenue for the manufacture of pneumatic conveying machines.

It is announced that the Supreme Motor Co., Warren, Ohio, is going ahead with its plans for the erection of a factory and has placed a contract with the Crowell-Lundoff-Little Co., Cleveland.

Indianapolis

INDIANAPOLIS, Dec. 9.

The International Machine Tool Co., Indianapolis, is pushing work on orders for Libby heavy turret lathes for Belgian and French manufacturing concerns interested in replacing their worn out equipment. One large order is from the Minerva Motors Corporation of Belgium. The company has just received an order from China for lathes for the arsenal at Shanghai.

The William Small Co., Indianapolis, has purchased the business of the Monroe Motor Co., Pontiac, Mich., and the motor building plant of the company at Port Huron, Mich. The equipment of the Pontiac plant is being moved to 33-36 West Eleventh Street, Indianapolis, where a factory is being established to manufacture 20 cars per day. Plans are being made also for the removal of a large amount of material, finished and semi-finished, from Port Huron. The William Small Co. was incorporated in November, 1917, with $1,000,000 capital stock. Its officers are William Small, president; Frank Monroe, vice-president, and H. H. Alexander, secretary-treasurer.

The Huntingburg Wagon Works, Huntingburg, Ind., has increased its capital stock from $30,000 to $90,000.

The Colfax Co., South Bend, Ind., has been incorporated with $10,000 capital stock to manufacture automobile accessories. The directors are Charles A. Lancaster, Benjamin S. Walters and John G. Yeagley.

The Universal Frictionless Door Track & Hanger Co., Hammond, Ind., has been incorporated with $15,000 capital stock, to manufacture door fixtures. The directors are William A. Davis, Doll L. Newman and Jacob F. Wolff.

The Cochran Brothers Mfg. Co., Anderson, Ind., has been incorporated with $50,000 capital stock to manufacture car steps. The directors are James T., William and Edward Cochran.

Cincinnati

CINCINNATI, Dec. 9

Fewer attempts to cancel orders for machine tools are now coming in, but there are still a number of stop-work instructions received each week. Information seems to be lacking as to any definite Government policy in handling cancellations and the mooted questions arising from them. It should be stated, however, that a more confident feeling as to the future exists and the readjustment period may not contain as many difficult problems to solve as was anticipated.

A local machine-tool builder has lately received some very attractive orders from its selling agencies in Detroit and Chicago districts. It is understood that these machines are intended for automobile plants. Reports that some large orders have been received for machine tools to be shipped to Europe cannot be definitely confirmed, but it is known that recently selling agencies in Europe have been carrying on an active correspondence both by mail and cable with manufacturers. The general inference is that the export business may become of such importance that much of the slack in this country can be taken up in the shipment of machine tools abroad.

Attention has previously been directed to improvements planned by the Pennsylvania Railroad Co. in this vicinity. Work has been commenced at Richmond, Ind., on a large repair shop and an engine roundhouse.

The new plant of the Steubing Truck Co., Winton Place, Cincinnati, is now in full operation. The company manufactures lift-trucks and expects to add considerable machine equipment at a later date.

It is reported that the National Biscuit Co. plans to erect a large baking plant in Cincinnati, estimated to cost $1,500,000.

The plant of the Leshner Paper Stock Co., Hamilton, Ohio, suffered a fire loss last week estimated at $30,000. Rebuilding plans have not yet been announced.

The Automotive Mfg. Co., Dayton, Ohio, has been incorporated with $10,000 capital stock by George W. Mearick and others. Nothing is known as to manufacturing plans.

The Manufacturers' Production Co., Dayton, has let contract for an addition to its plant estimated to cost $16,000.

The Duriron Castings Co., Dayton, will build an addition to its plant to be used as a core room.

The Phelps Mfg. Co., Columbus, Ohio, is adding equipment to its plant for the manufacture of wire wheels.

The Lawrence Motor Co., Columbus, will have a small repair shop connected with its new establishment for the distribution of gasoline and electric trucks.

The Ohio Willow Wood Co., Mount Sterling, Ohio, is equipping a plant for the manufacture of artificial limbs.

The Noble Motor Truck Co., Kendallville, Ind., is erecting an addition to its plant.

The Standard Parts Co., Connersville, Ind., has acquired a factory adjoining its plant to be equipped for the manufacture of automobile axles.

The City Council, Greenup, Ky., is planning to rebuild its municipal electric-light plant, recently destroyed by fire.

The Kentucky Electric Lamp Co., Owensboro, Ky., has been incorporated with a capital of $100,000 to manufacture electric lamps. M. E. Pierson, Roy Burlew and H. F. Coombs are the incorporators.

The Pacific Coast

SEATTLE, Dec. 3.

The effect of the Government's order cancelling contracts for wooden vessels, not already on the ways, in Oregon and Washington shipyards is viewed with apprehension. The cancellation of contracts for 25 or more wooden vessels in the Oregon district involved a loss of nearly $20,000,000, and it is feared in some quarters that if the wooden plants are forced to cease operations a labor crisis may result. The cancellation of these contracts affects a large number of lumber mills which have depended largely upon shipyards for orders.

Many lumber plants in western Oregon and Washington are being closed for repairs and improvements, which is the first opportunity the owners have had for the past year and a half to make necessary changes. Equipment of all kind is in good demand, and supply is extremely limited. Second-hand equipment is moving well.

The Portland Brazing & Machine Works, Portland, recently installed three complete welding outfits, two for the ships and one portable set. The firm recently received an order for wedding 26 60-ft. pipe lengths, 24 in. in dia. for a Government dredge.

The Henry Weinhard Mfg. Co. and the Puritan Mfg. Co., Portland, both manufacturers of soda fountain supplies, have been consolidated and will utilize the Weinhard plant. It will be enlarged and new equipment installed.

The North Bend Lumber Co.'s mill at North Bend, Ore., has been closed temporarily to permit of extensive repairs being made. Considerable new equipment will be installed.

The Tomlin Box Co., Medford, Ore., plans the construction of a larger box factory. Its present plant will be incorporated with the new one, and additional machinery will be installed.

A packing plant to cost $1,500,000 will be erected in Boise, Idaho, by a syndicate composed of Herbert Lemp, Idaho Packing Co., the Davis Meat Co., Boise Valley Packing Co., and Ernest A. Evans. It will also be equipped for manufacturing by-products.

It is reported that the Foundation Co., Tacoma, and Portland, is considering the conversion of its wooden shipbuilding plant in Tacoma into a steel shipbuilding plant with eight ways. Bayly Hopkins, Western general manager, states that the proposition has not yet taken definite form.

Joseph Supple, Portland, shipbuilder, is having plans prepared for a 10,000-ton floating drydock, work to begin about Jan. 1.

The shipbuilding plant of the Union Construction Co., San Francisco, will be in complete operation by Jan. 1. Contract for the erection of a one-story machine shop to cost $40,000 has been let. The company is said to have received assurances that none of its Government contracts will be canceled.

A contract has just been awarded by the Government for the construction of an oxy-acetylene generating plant at Mare Island for $36,499, to be completed within 120 days.

The National Carbon Co., San Francisco, has let contract for the erection of a one-story reinforced concrete addition, 50 x 65 and 30 ft. high, to cost $25,000.

St. Louis

ST. LOUIS, Dec. 9.

The Waverly Electric Co., Waverly, Mo., will install a duplicate generating unit for emergency purposes, including a 20 k.v.a. three-phase generator and a 25-hp. gas engine.

The town of Sulphur, Okla., will equip a power plant in addition to that now operating its pumping station.

The Riverside Packing Co., Oklahoma City, Okla., J. E. Erwin and others interested, will establish a packing plant and will require about $50,000 worth of machinery.

Swift & Co., Chicago, Ill., will increase the equipment in its fertilizer plant at Shreveport, La., and is in the market for about $25,000 worth of machinery.

The New Orleans Boiler Works, New Orleans, will equip three new buildings for foundry and machine shop use and are taking bids on machinery.

The Mississippi Fiber Co., Meridian, Miss., is in the market for power plant and fiber handling machinery, with a view to changing the plant into an absorbent cotton factory.

The Weil Electric Works, 821 Perdido Street, New Orleans, is in the market for 100-kw. generators, also 200-kw. alternating current three-phase 2200 volt, 60 cycle alternator, three 50-hp. vertical motors and other equipment.

Texas

AUSTIN, Dec. 7.

The National Compress & Warehouse Co., Galveston, has been incorporated with a capital stock of $300,000 and will construct a cotton compress and warehouse. W. R. A. Rogers is one of the stockholders.

The Crown Oil Co., Houston, has purchased a tract of land on the ship channel near that city, on which it will build an oil refinery to cost approximately $1,000,000.

Charles Lindsey and W. H. Lindsey, Wichita, Kan., and F. B. Wise, Indianapolis, Ind., have purchased a site at Abilene, Tex., upon which they will build an oil refinery to cost about $750,000. The crude petroleum supply for the plant will be obtained from the Ranger field by means of a pipe line.

The City Commission, Houston, has adopted plans and specifications for improvements to the municipal waterworks to cost about $160,000. New pumping machinery, motors and electric generators are to be installed.

Palmer Hughes, Houston, and associates have purchased land near La Porte, which they will use as a site for an oil refinery with a daily capacity of 600 bbl., construction of which will start soon.

The Bureau of Yards and Docks, Washington, has completed plans for the construction of a new industrial works and shop building at Galveston, to cost about $270,000.

Canada

TORONTO, Dec. 9.

With the signing of the armistice the machine-tool business took a decided drop, and tools used exclusively for war purposes are almost a drug on the market, although in some cases they can be turned to account in the handling of peace contracts. There is still a fairly good demand from shipbuilding plants. Manufacturers who are now turning to domestic business find that it will be necessary to make a number of changes in their present equipment to efficiently handle the new business now offering. The Dominion Government, provincial governments and municipal councils have decided to go ahead with undertakings which have been held up on account of the war, and it is anticipated that the near future will bring forth a large demand for equipment for waterworks plants, electrical development works, mining enterprises, railroads and other projects. Manufacturers are also looking forward to considerable business in connection with the rebuilding of the war devastated countries.

The Hercules Rubber Co., Brampton, Ont., is in the market for one 200 hp., 25 cycle, 550 or 2200-volt motor; one 15-hp. motor and a number of 3 and 5-hp. motors.

The city of Sarnia, Ont., will make repairs and build an addition to its waterworks plant, including the installation of a motor-driven sludge pump, to cost $10,000. H. F. Hall is engineer.

The City Council, North Vancouver, B. C., is making preparations for the construction of a dry dock to cost about $60,000. R. F. Archibald is clerk.

The Three Rivers Shipyards, Ltd., Three Rivers, Que., will make further improvements to its plant to cost $15,000. H. L. Clifford is engineer.

The Returned Soldiers' Co-operative Lumber Co., Victoria and Vancouver, B. C., will erect lumber mills, workmen's residences, stores, and general buildings in New Alberni, Port Moody, Pingston Creek and Moyie, B. C. Thomas Meredith, Vancouver, B. C., is manager.

The Canadian Northern Railway, 1 Toronto Street, Toronto, propose to erect car shops at Port Mann and New Westminster, B. C. D. B. Hanna is manager.

The Sidney Rubber Mfg. Co., Sydney, B. C., will build a manufacturing plant at Vancouver, B. C., to cost about $60,000. B. D. White, 402 Pender Street West, Vancouver, is manager.

The Pacific Construction Co., Port Coquitlam, B. C., will build a machine and blacksmith shop to cost $3,500. Grenier & Emery are the contractors.

The Corbet Foundry & Machine Co., Ltd., Owen Sound, Ont., is in the market for one 10 and one 5-hp. electric motors, 550 volts, three-phase, 60 cycle.

The shops of the Shawinigan Water & Power Co., Montreal, were damaged by fire Dec. 3 with a loss of $25,000. The machinery was badly damaged by water. The plant will be rebuilt immediately. The company has under consideration the development of Gres Falls, on the St. Maurice River, and contemplates spending about $1,000,000.

La Minoterie Moderne, Ltd., has been formed with a capital stock of $20,000. It is the intention to take over the business of Laurin & Frere, Charlemagne, Que., and to develop water power in the counties of L'Assomption, Montcalm and Joliette.

Government Purchases

WASHINGTON, Dec. 9.

Bids will be received by the Bureau of Supplies and Accounts, Navy Department, Washington, at an early date under schedules as follows: Schedule 7277½, Alexandria, Va., 8 turret lathes; 7280½, Brooklyn, 1 heavy duty shaper, 1 pipe cutting and threading machine, 1 milling machine, 1 drill press, 1 motor-driven planer, 1 motor-driven lathe; 7320½, Puget Sound, 14 alternating current motors, 7 steel or scroll geared chucks, opening Dec. 23; 7328½, North Charleston, 1 centering machine, 1 key seating machine, 3 double dry grinders and 1 power hacksaw, opening Dec. 16; 7329½, Alexandria, Va., 11 screw machines, opening Dec. 20; 7337½, Alexandria, Va., 1 power press equipment, opening Dec. 16; 7338½, Alexandria, Va., 2 engine lathe equipments, opening Dec. 16; 7360½, Alexandria, Va., 2 engine lathes; 7361½, Brooklyn, N. Y., 8 plate punching tables, opening Dec. 17; 7362½, Alexandria, Va., 2 engine lathes, opening Dec. 20; 7363½, Alexandria, Va., 2 grinding machines; 7366½, Alexandria, Va., 5 automatic grinders and 4 grinding machines, opening Dec. 20; 7381½, Boston, 1 angle beveling machine; 7382½, Mare Island, 2 generating sets and 2 sets of engine parts, opening Dec. 27; 7383½, Brooklyn, 1 motor-driven lathe, opening Dec. 20; 7384½, for Eastern and Western yards, 49 pumps; 7385½, Washington, 16 solid boring bars; 7387½, Brooklyn, 1 engine lathe, 1 set boring bits, 1 drill press and 1 traverse head shaper; 7388½, Charleston, 2 borning and drilling machines and 1 boring mill; 7389½, Charleston, 1 radial drill, 1 radial universal drill, 5 drill presses and 3 sliding head drills; 7391½, Mare Island, 1 joggling press; 7396½, Washington, 1 power crusher, 1 grinding apparatus, 1 hacksaw, 1 drill press, 1 electric drill, 1 electric furnace and 6 testing machines; 7404½, Charleston, 1 horizontal pump; 7410½, Washington, milling machines; 7412½, Alexandria, Va., 1 thread milling machine, 7413½, New Orleans, 2 industrial trucks; 7420½, Brooklyn, 5 motor-driven lathes and 1 bandsaw; 7422½, North Charleston, 2 milling machines and attachments; 7423½, Mare Island, miscellaneous electrical apparatus.

The Cleveland Twist Drill Co., Cleveland, has issued a beautiful calendar for December, 1918, and all of the year 1919, which does not lose in impressiveness, in spite of the fact that the great war is virtually ended. A gunner in France is pictured yelling for more guns and below is given the message from Charles M. Schwab to the engineers and mechanics of America, calling upon them to devote their energies to answering the cry from across the ocean.

